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Culture, Tourism and the Centre for Education Statistics

Education-to-Labour Market Pathways of Canadian Youth: Findings from the Youth in Transition Survey

by Darcy Hango and Patrice de Broucker

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Darcy Hango and Patrice de Broucker
Statistics Canada

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Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

Acronyms

The following acronyms are used in this publication:

CEGEP	Collège d'enseignement général et professionnel
COLL	Collège certificate or diploma
CPRN	Canadian Policy Research Networks
CV	Coefficient of variation
GPA	Grade point average
HSD	Did not complete high school
HSG	Completed high school
LF	In the labour force and not a full-time student
LFS	Labour Force Survey
OLS	Ordinary least squares regression
OTHR	Other certificate/diploma/degree
PISA	Programme for International Student Assessment
PSE	Post-secondary education
PSED	Some post-secondary education, no certificate/diploma/degree
SOC	Standard Occupational Classification
TR	Completed trades/apprenticeship program
UNIV+	Post graduate degree
UNIV	University degree
YITS	Youth in Transition Survey

Table of contents

Acknowledgements		4
Acronyms		5
Foreword		10
Executive summary		11
1.	**Introduction**	**14**
1.1	Introduction	14
1.2	CPRN 'Pathways for Youth to the Labour Market' research project	15
1.3	Mapping pathways using the Youth in Transition Survey	17
1.3.1	Non students	20
1.3.2	Students	23
1.3.3	Analysis plan	25
2.	**Important background factors associated with education to labour market pathways**	**26**
2.1	Descriptive analysis	27
2.1.1	Background demographic characteristics	27
2.1.2	Linguistic and province of high school characteristics	28
2.1.3	Background family characteristics	29
2.2	Multinomial logistic regression analysis	29
2.2.1	Background demographic characteristics	33
2.2.2	Linguistic and province of high school characteristics	34
2.2.3	Background family characteristics	36
2.3	Summary	37

Table of contents

3.	**Linking intervening factors with education to labour market pathways**	**38**
3.1	Descriptive analysis	40
3.1.1	Academic performance	40
3.1.2	Working status during high school	40
3.1.3	Family responsibility	42
3.1.4	Parental expectations	42
3.1.5	Mobility between province of high school and province of residence in Cycle 3	43
3.2	Multinomial logistic regression analysis	43
3.2.1	Academic performance	43
3.2.2	Working status during high school	44
3.2.3	Family responsibility	44
3.2.4	Parental expectations	46
3.2.5	Mobility between province of high school and province of residence in Cycle 3	46
3.3	Summary	46
4.	**Linking educational paths to labour market outcomes in December 2003**	**48**
4.1	Employment status	49
4.1.1	Descriptive analysis	49
4.1.2	Logistic regression of employment	50
4.2	Total weekly earnings from all jobs	53
4.2.1	Descriptive analysis	53
4.2.2	Linear regression results of total weekly earnings	54
4.3	Occupation	57
4.4	Job satisfaction	58
4.5	Summary	62
5.	Conclusion	64
Appendix		66
References		72
Endnotes		76
Cumulative index		77

Table of contents

List of Tables and Figures

Figure 1.1	CPRN's "Mapping Pathways for Young People from School to the Labour Market" Project Overview	18
Figure 1.2	Using YITS to map pathways from school to the labour market by December 2003	19
Chart 1.1	Proportion of YITS respondents who follow particular school-to-labour force pathways	22
Table 1.1	Highest level of postsecondary education taken across all programs and institutions for students in December 2003	24
Table 1.2	Background demographic characteristics of students in December 2003	25
Table 2.1	Background demographic characteristics of youth, by education-to-labour market pathway	31
Table 2.2	Background linguistic and province of high school characteristics of youth, by education-to-labour market pathway	32
Table 2.3	Background family characteristics of youth, by education-to-labour market pathway	33
Table 2.4	Multinomial logistic regression results predicting the likelihood of following education-to-labour market pathways: Background characteristics	34
Table 2.5	Multinomial logistic regression results predicting the likelihood of followingeducation-to-labour market pathways: Background linguistic and province of high school characteristics	35
Table 2.6	Multinomial logistic regression results predicting the likelihood of following education-to-labour market pathways: Background family characteristics	36
Table 3.1	Intervening characteristics by education-to-labour market pathway	41
Table 3.2	Multinomial logistic regression results predicting the likelihood of following Education-to-labour market pathways: Intervening characteristics	45
Table 4.1	Youth employment status in December 2003, by education-to-labour market pathway	50
Table 4.2	Logistic regression results predicting the likelihood of employment in December 2003, by education-to-labour market pathway	52
Table 4.3	Total earnings per week across all jobs in December 2003, by education-to-labour market pathway	54
Table 4.4	Ordinary least squares regression results predicting the total log earnings across all jobs in December 2003, by education-to-labour market pathway	55
Table 4.5	Occupational category worked at any job in December 2003, by education-to-labour market pathway	59
Table 4.6	Highest level of overall job satisfaction reported for any job in December 2003, by education-to-labour market pathway	61
Table 4.7	Highest level of satisfaction with earnings reported for any job in December 2003, by education-to-labour market pathway	61

Table of contents

Appendices

Table A.1.1 Weighted population count and proportion of YITS respondents who follow particular school-to-labour market pathways 66

Table A.2.1 Multinomial logistic regression results predicting the likelihood of following education-to-labour market pathways: Background characteristics 67

Table A.2.2 Multinomial logistic regression results predicting the likelihood of following education-to-labour market pathways: Background linguistic and province of high school characteristics 68

Table A.2.3 Multinomial logistic regression results predicting the likelihood of following education-to-labour market pathways: Background family characteristics 69

Table A.3.1 Multinomial logistic regression results predicting the likelihood of following education-to-labour market pathways: Intervening characteristics 70

Table A.4.1 Average hourly earnings across all jobs in December 2003, by education-to-labour market pathway 71

Foreword

Young Canadians are looking for more choice when it comes to learning options – before and during their careers. That was a strong message coming out of CPRN's Youth Dialogue in November 2005. These young people told us that some form of post-secondary education should be available to everyone – whether it is university, college, trades programs or experiential learning. They told us there should be a variety of well- supported learning opportunities.

CPRN is in the middle of a two-year project to examine the ways in which young people navigate from high school through to the labour market. The goal is to identify what supports or hinders youth's ability to find pathways that lead to good jobs and to examine attitudes and underlying values about the different pathways.

This report, by Darcy Hango and Patrice de Broucker, jointly published by CPRN and Statistics Canada, is the fifth in CPRN's series on *Pathways for Youth to the Labour Market*. The authors use data from the *Youth in Transition Survey* to look at different paths that young people in Canada take from high school through to regular participation in the labour market, who takes these paths, and what labour market outcomes are associated with them.

Hango and de Broucker find that educational attainment is related to such characteristics and influences as gender, parental educational attainment, number of siblings, marks in high school, parental expectations, and the amount of work students do for pay while in high school. Their research also reinforces the link between educational attainment and earnings as young adults.

We would like to thank Darcy Hango and Patrice de Broucker for their important contribution to our understanding of the characteristics and consequences of different pathways to the labour market. We would also like to thank Human Resources and Social Development Canada, whose financial contribution helped to make this joint Statistics Canada – Canadian Policy Research Networks research possible.

Sharon Manson Singer, Ph.D.
President
Canadian Policy Research Networks

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Director
Culture, Tourism and the Centre for Education Statistics
Statistics Canada

Executive summary

1. Pathways from education to the labour market for the Youth in Transition Survey

- The Canadian Policy Research Network 'pathways' research project is designed to examine different paths that young people take from high school through to regular participation in the labour market, who takes these paths, and what labour market outcomes are associated with them. This report uses Statistics Canada's Youth in Transition Survey (YITS) to study these issues based on a national sample which can be generalized to all young Canadian adults.
- The most recently available survey year for YITS is 2004; therefore, the final point at which we can assess the labour market experiences of young adults is in December 2003, when they were between ages 22 and 24. As a result, many of the youth were still in school and so were removed from our analysis of labour market status in December 2003.
- We identified 10 prominent education-to-labour-market pathways. The most common pathway is to have a high school diploma only (almost 12% of all respondents), while the least common is to take some time off between high school and the start of a postsecondary program leading to a university degree (2.8%).

2. Important background factors associated with education-to-labour-market pathways

- Females are less likely to follow the pathway of dropping out of high school and are more likely to go on to some type of postsecondary program prior to entering the labour force. They are also less likely to delay the start of a postsecondary program than are males.
- In terms of ethnic background, the most salient finding is that Aboriginal youth are more likely than non-Aboriginal youth to leave the educational system with a much lower level of attainment.
- The presence of a long-term limiting condition is a hindrance to further education; these individuals are much less likely to follow pathways leading to the completion of a postsecondary degree or diploma.
- Youth who attended high school in Quebec were more likely than youth from Ontario to drop out of high school; yet if they did graduate from high school and attend a postsecondary program, they were more likely than their counterparts from Ontario to go directly following high school.
- A greater number of siblings led to a greater risk of not finishing high school prior to entering the labour market, as does not living in an intact family (two-parent, non-step family) during high school. As well, the typical universally positive relationship between educational attainment levels across generations was found: youth with parents who had a high level of education were more likely to go to a postsecondary program prior to entering the labour market.

3. Linking intervening factors to educational pathways

- Marks matter. A very strong relationship was found between grade-point average and dropping out of high school: youth with very low marks in high school were much more likely than those with mid to high marks to drop out and not return. For youth who had attended postsecondary programs, very high marks predicted that the teen would go directly to a postsecondary program after high school rather than delaying.
- Working some hours in high school can be beneficial, while working a great number of hours (over 20) can be detrimental, leading to a greater risk of dropping out of high school. Working over 20 hours a week in high school was also associated with teens delaying their attendance at a postsecondary institution following high school.
- Individuals who had a child or who entered a conjugal union during their teenage years are disproportionately represented among those who dropped out of high school, as well as among those who dropped out but later returned (2nd chancers); they were less represented among the paths leading to postsecondary attendance.
- Parental expectations regarding their child's education are generally high and higher expectations are associated with higher educational attainment.

4. Linking educational paths to labour market outcomes

- Almost 80% of youth who were not in school in December 2003 were employed. The likelihood of employment is highest for individuals who had delayed postsecondary attendance after high school, but then either graduated from college or university, and for college graduates who had not delayed their postsecondary attendance after high school graduation. Meanwhile, high school dropouts, 2nd chancers, and postsecondary leavers who had delayed their participation in a postsecondary program following high school graduation were more often not employed. These effects are accentuated when controlling for opportunity for experience.
- The odds of employment also increased as the number of months spent out of full-time school increased, for males, for individuals who had no children, and for those who had worked more hours in high school.
- The median weekly earnings across all jobs worked in December 2003 were $503. On average, postsecondary graduates (regardless of whether they delayed postsecondary attendance following high school graduation) earned more than the median. High school dropouts (whether or not they returned to school) and those who entered but did not complete a postsecondary program earned less. However, some university graduates were earning less than high school dropouts, though this is at least partly attributable to the university grads having had less opportunity for work experience.
- Youth who delayed their postsecondary attendance following high school graduation did not earn more than youth who did not delay, suggesting that taking time off between high school and a postsecondary program does not translate into greater earnings between ages 22 and 24.
- In addition to the effects of school pathway, several additional interesting results were found for other indicators. For example, women have lower earnings than men, earning almost 28% less than their working male counterparts. Meanwhile, working a greater number of hours in high school had a positive effect on earnings: working on average more than

20 hours per week increased earnings by about 20%, as compared to not working at all. However, it adversely affected educational attainment.

- Also when controlling on pathway, we found that youth who went to high school in Nova Scotia, New Brunswick and Manitoba earned significantly less in December 2003 than youth who went to high school in Ontario. Meanwhile, youth who went to high school in Alberta earned significantly more per week than those who went to high school in the Atlantic provinces, Quebec, Manitoba, British Columbia, and Ontario; Saskatchewan was the only province that was comparable to Alberta.
- Young adults who moved province after high school witnessed an increase in earnings compared to youth who remained in the same province. Specifically, earnings increased by 11% for youth who moved to Alberta and by 12% for those who moved to a province other than Alberta.
- The most common occupations were in sales and service, while the least common were in management or business related. Young adults with postsecondary degrees or diplomas were more represented among management and business-related jobs, as well as professional, scientific, education and government jobs. Meanwhile, young adults with a high school diploma or less were more represented among the goods-producing and primary sectors and those who entered but did not complete a postsecondary program were more represented among the lowest-paying sales and service occupations, likely leading to their low earnings observed earlier.
- On aggregate, young employed adults were quite satisfied with their jobs in December 2003: almost 90% of them were quite satisfied with all aspects of their jobs, while 10% were dissatisfied. Youth who dropped out of high school but eventually returned to obtain a high school diploma were the most over-represented among the dissatisfied group, while college graduates appeared to be the most satisfied with all aspects of their jobs. However, overall, a smaller proportion were satisfied with their earnings than with regard to all aspects of their jobs, suggesting that other factors besides earnings affect level of job satisfaction. Youth who did not take any time off between high school and their postsecondary studies and who then left without obtaining a postsecondary degree/diploma were one of the most over-represented groups among those who were dissatisfied with their earnings across all jobs in December 2003.

1. Introduction

1.1 Introduction

One of the goals of our systems of education is to provide our young people with the skills and knowledge they need to succeed in the labour market. In this study, we look at data from the Youth in Transition Survey (YITS) to examine different paths that young people take from high school through to regular participation in the labour market, who takes these paths, and what labour market outcomes are associated with them.

During the transition from adolescence to adulthood, most young people move from economic dependence on their parents to independence and they typically leave their parents' home. In the past, the most 'normative' path involved finishing school, starting a first full-time job, marrying and then starting a family (Marini 1984). However, this pattern has weakened due to the prolonged nature of the transition to adulthood, resulting in roles occurring simultaneously. The rapid expansion of mass higher education (see Wanner 1999) and the need to have elevated levels of schooling have contributed to this delay in the transition to adulthood, such that completing schooling and establishing an independent household may extend to around age 30 (Ravanera, Fernando and Burch 1998; Ravanera, Fernando, Burch and Le Bourdais 2002). A great deal of research in the social science literature on the transition to adulthood has been carried out, both in terms of predicting the pace and sequence of events, as well as the consequences of following particular paths (Marini 1984). From this past literature we know that events such as leaving the parental household, completing education, acquiring a stable job, and family formation are complex, interlinked, and associated with changes in values and ideals (Furstenberg, Rumbaut and Settersten, 2005).

This report examines the important pathways from school to the labour market. In the process, we attempt to link this transition to important background characteristics, as well as highlight the pathways leading to successful employment transitions in early adulthood. This project involves 'mapping' the various pathways that young Canadian adults take between high school and the labour market. One of the goals is to differentiate between 'linear' and 'nonlinear' paths. Linear paths are of two main types: (1) either young people go directly from high school to postsecondary education and then enter the labour market or (2) they enter the labour market directly from high school, bypassing further education. Nonlinear paths are those routes that generally do not involve a straight transition from education to full-time employment. For example, high school graduates may take some time off after obtaining their diploma before returning to postsecondary education. Of the individuals who follow this path, some may enter college or trade programs and then enrol in university, while others may enter university and then transfer to a college or trade program. Yet others may drop out of high school, enter the labour

force, and then return to postsecondary studies either on a full- or part-time basis. In addition, an ever-increasing number of young adults in these nonlinear paths are combining work and school and therefore are already being exposed to the labour market prior to leaving the educational system. One of the challenges of this project is to accurately and meaningfully define these pathways and to then document the major characteristics of the individuals following each path and the labour market outcomes associated with different paths.

Our goal is to build upon the work of Krahn and Hudson (2006) who documented the school-to-work pathways for Alberta high school graduates, by using data from a national survey (YITS) and by including not only high school graduates but also high school dropouts. Krahn and Hudson found that the majority of Alberta high school graduates (88%) had enrolled in some type of postsecondary institution after high school. They showed, not surprisingly, that this investment in postsecondary education has benefits in the labour market in that it provides access to better-paying jobs where youth report more job satisfaction. They also showed that almost a quarter of their sample took a nonlinear path and returned to high school the year following graduation; a major reason was to improve grades in order to enter a postsecondary program at some point in the future.

1.2 CPRN 'Pathways for Youth to the Labour Market' Research Project

This study forms a part of a program of research, Pathways for Youth to the Labour Market, initiated by Canadian Policy Research Networks (CPRN). CPRN developed a diagram to illustrate the most salient education-to-labour-market pathways. This diagram, also presented by Krahn and Hudson (2006) is shown here as Figure 1.1 The original CPRN pathway diagram illustrated 20 distinct paths based on previous trends known to be important in the transition from school to the labour market. Due to data constraints in the YITS, mainly as a result of the sample ending at age 22 to 24, certain paths had to be dropped and some had to be combined with other paths to obtain a large enough sample size per pathway. We made every effort to combine pathways in substantively meaningful ways and to retain as many paths as possible.

The original pathways diagram begins with two categories: (1) those who had ever dropped out of high school; and (2) those who had never dropped out of high school. The first group can be further broken down into those that never went back to obtain their high school diploma and those who did, that is, those who availed themselves of the 'second chance' option. Meanwhile, the second group can be further delineated into (a) those who went to postsecondary studies immediately after graduating high school and (b) those who delayed going on to postsecondary studies. The original CPRN pathway in Figure 1.1 included sub-paths within each broad grouping based on whether youth had only a high school diploma; whether they had started a postsecondary program but then left before finishing; whether they had a college diploma, including those who obtained a university degree prior to getting a college diploma (those that essentially retool for more applied labour market skills); whether they had a university degree or higher (via first getting a college diploma or not); and whether they had completed a trade/apprenticeship program.

Many of these paths, while important for later labour market outcomes, do not exhibit large enough numbers in YITS to be included separately in this report. An interesting path, for example, concerns those who went to college after obtaining a university degree (Path 12); this path is not represented by any YITS respondents prior to age 22 to 24 simply because not enough time has passed to allow them to have followed this route. Possibly closer to age 30 we will see more respondents in this path. Another important path involves the completion of a trade or apprenticeship program (Path 13 and 20). Only 2,529 of the population represented by YITS respondents had completed a trade/apprenticeship program by age 22 to 24.

Box 1

Data: What is the Youth in Transition Survey (YITS)?

The Youth in Transition Survey is a Canadian longitudinal survey designed to examine the patterns of, and influences on, major transitions in young people's lives, particularly with respect to education, training and work. Ten broad objectives were developed for YITS:

1. to examine key transitions in the lives of youth, such as the transition from high school to postsecondary schooling and the initial transition from schooling to the labour market;

2. to better understand educational and labour market pathways and the factors influencing these pathways;

3. to identify educational and occupational pathways that provide a smoother transition to the labour market;

4. to examine the incidence, characteristics, factors and effects of leaving school;

5. to understand the impact of school effects on educational and occupational outcomes;

6. to examine the contribution of work experience programs, part-time jobs, and volunteer activities to skill development and transition to the labour market;

7. to study the attitudes, behaviours, and skills of young people entering the labour market;

8. to better understand the determinants of postsecondary entry and postsecondary retention, including education financing;

9. to better understand the role of educational and labour market aspirations and expectations in investment in further education and career choice; and,

10. to explore the educational and occupational pathways of various subgroups, particularly youth "at risk."

In order to address these objectives, data were collected from two age groups of youth in the first cycle of the survey in 2000. One began its participation at age 15 and the other at ages 18 to 20. Both cohorts were asked to provide a range of information on their education and employment experiences as well as information on their personal characteristics including, for example, their educational aspirations. The younger group also participated in the Programme for International Student Assessment (PISA), an internationally recognized test to evaluate the knowledge and skills of 15 year-olds in reading, mathematics, and science.

In total, almost 30,000 youth aged 15, and more than 22,000 youth aged 18 to 20 from the ten provinces participated in the first cycle of YITS in 2000. Analysis for both cohorts was presented in different publications available to download for free through the Internet at www.statcan.ca. The first follow-up interview with the YITS participants took place in early 2002 with over 40,000 youth interviewed for a second time. At that time, the two cohorts were ages 17 and 20 to 22, respectively. The second follow-up interview took place two years later and over 37,000 respondents provided information on their activities at school and at work. Respondents were ages 19 and 22 to 24 at that time.

Sample used in this report: 18 to 20 year-old cohort

The target population for the 18 to 20 year-old cohort comprises residents of the ten provinces of Canada who were born between 1979 and 1981. These individuals turned 18 to 20 during 1999, the reference year for cycle 1. The design implemented for the 18 to 20 year-old cohort was based on certain groups of households that were in the Labour Force Survey (LFS) between January 1997 and December 1999. Individuals who were full-time members of the armed forces and persons living on Indian reserves or in northern and remote areas are excluded from LFS and were therefore also excluded from this cohort. From these LFS households, a sample of individuals born between 1979 and 1981 was selected. The sample consisted of 29,200 18 to 20 year-olds in cycle 1. In total, 23,600 (80.9%) individuals responded in cycle 1. Youth who did not respond in cycle 2 were taken out of the sample, which reduced it to 22,400. In cycle 2, the response rate was 83.9% or 18,800 youth who answered interviewers' questions. In cycle 3, the response rate was 78.9% or 14,800 respondents.

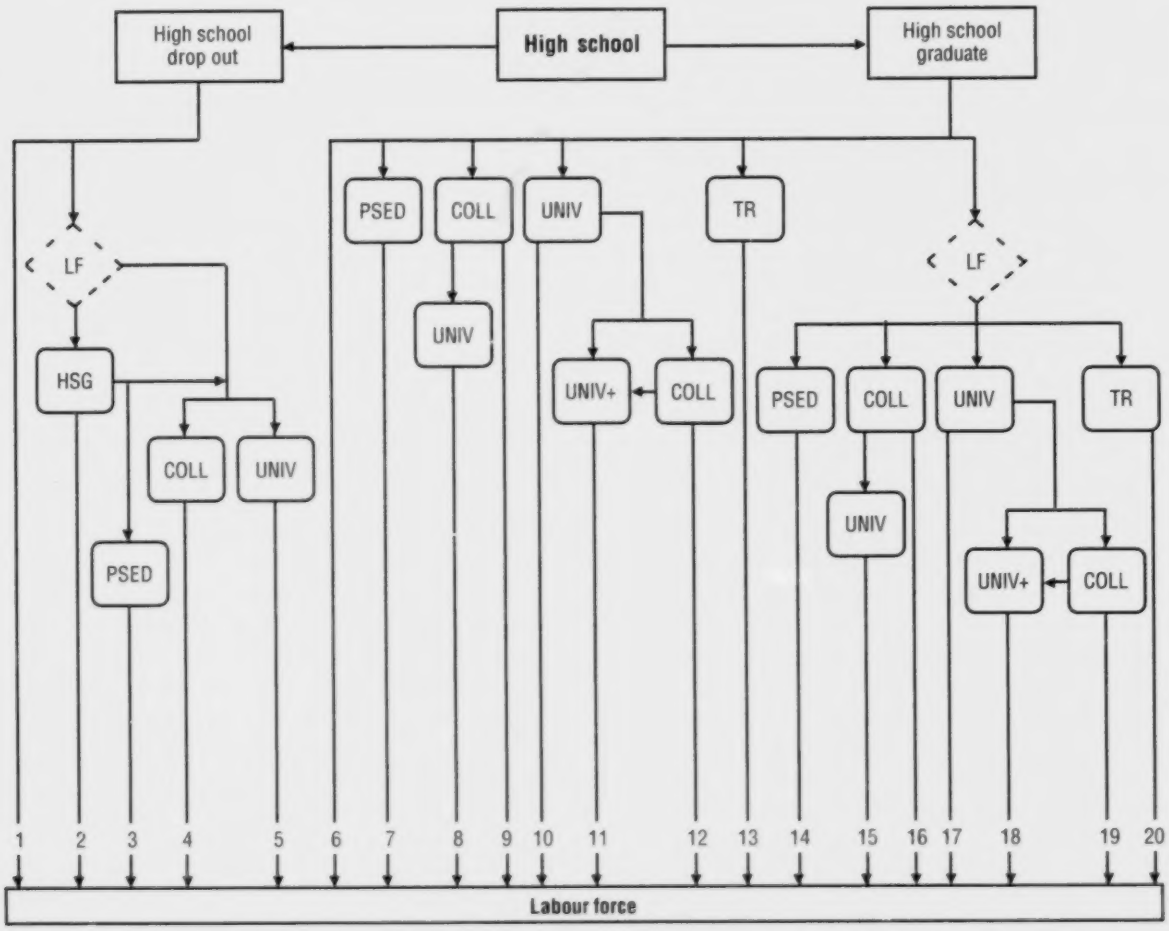
Source: Shaienks, Eisl-Culkin, and Bussière (2006: 26-27), and authors.

1.3 Mapping pathways using the Youth in Transition Survey

Due to data constraints, we were forced to combine various pathways, merging the original 20 paths to 15 (diagram not shown). For instance, there were no respondents who had obtained a college diploma after first receiving a university degree (Path 12 in Figure 1.1). In addition, trade/apprenticeship programs were combined with all other certificate/diploma/degree programs, such as those from private business schools and certificates from professional associations. The sample sizes for those respondents who had ever dropped out of high school was much less than for those who had not, which resulted in a greater degree of collapsing within that pathway. For example, any type of completed postsecondary credential (ie, a college diploma, university degree etc.) was combined for dropouts; conversely, these paths could be kept separate for those who had never dropped out of high school and, in fact, could be kept distinct for paths delineating high school-postsecondary gaps from high school-postsecondary non-gaps. Possible paths for individuals who had ever dropped out of high school include taking some type of postsecondary education without obtaining a high school diploma.

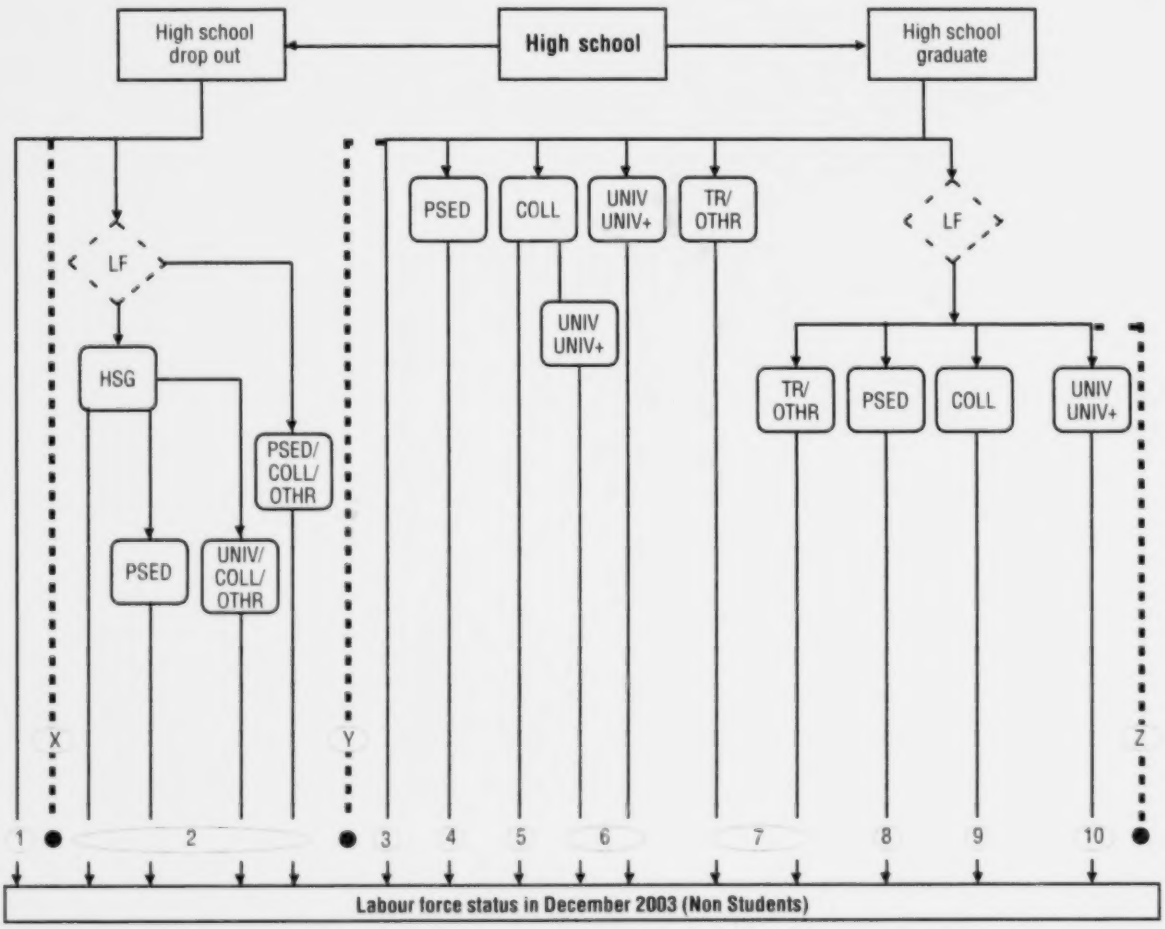
The final step in creating meaningful and usable pathways saw the 15 paths further narrowed to 10, as well as removing students. Respondents who were going to school, either on a part- or full- time basis in December 2003 are designated via paths X, Y, and Z. Path X are those who ever dropped out of high school, path Y are those who graduated high school and started a postsecondary program within 4 months, while path Z are high school graduates who had more than a four-month delay between high school graduation and the start of a postsecondary program. The remaining pathways of non-students in December 2003 are labelled from 1 to 10 (described below) and are represented in Figure 1.2. Next, we discuss in more detail the pathways that non-students follow to the labour market. In addition, we provide further information on respondents who were students in December 2003, including some background information as well as current educational status.

Figure 1.1
Canadian Policy Research Network's "Mapping Pathways for Young People from School to the Labour Market" project overview



HSD: did not complete high school
HSG: completed high school
TR: completed trades/apprenticeship program
PSED: some post-secondary education, no certificate/diploma/degree
COLL: college certificate or diploma
UNIV: university degree
UNIV+: post graduate degree
LF: in the labour force and not a full-time student

Figure 1.2
Using the Youth in Transition Survey to map pathways from school to the labour market by December 2003



HSD: did not complete high school
HSG: completed high school
TR: completed trades/apprenticeship program
PSED: some post-secondary education, no certificate/diploma/degree
COLL: college certificate or diploma
UNIV: university degree
UNIV+: post graduate degree
LF: in the labour force and not a full-time student
OTHR: other certificate/diploma/degree

Students in December 2003
X ■ = Ever dropped out of high school
Y ■ = High school graduate, never dropped out, no gap between high school and post-secondary education
Z ■ = High school graduate, never dropped out, had a gap between high school and post-secondary education

1.3.1 Non-students

Path 1 represents youth who had ever dropped out of high school and who, by December 2003, had never returned to obtain their high school diploma or any other type of training. Meanwhile, in Path 2, all individuals who had ever dropped out of high school but who then went back to high school and/or received any type of postsecondary training were put in the same path; these can be thought of individuals who have received a '2nd chance' in the education system. The remaining paths (3 to 10) encompass only those individuals who never dropped out of high school. Path 3 identifies individuals who obtained their high school diploma, but nothing more prior to entering the labour force by December 2003. Paths 4 to 10 can further be delineated into (a) those who went to postsecondary studies immediately (within four months) after graduating high school and (b) those who delayed going on to postsecondary studies (more than four months). For simplicity, we call the first group 'non-gappers' and the second group 'gappers.' Furthermore, we chose more than four months as the deciding factor distinguishing gappers from non-gappers because normally, students who do not delay their postsecondary studies graduate from high school in June and start a postsecondary program by September.

'Non-gappers' can be further broken down into youth who started a postsecondary program, yet did not finish by December 2003 and who were not enrolled in a program as of this date (non-gapper PSE leavers (Path 4). Path 5 contains youth who obtained a college diploma by December 2003 and who were no longer enrolled in another program, while youth who follow Path 6 obtained at least a university degree. This pathway includes those who went directly to a university program and those who obtained a college diploma prior to obtaining a university degree. It is important to point out that students from Quebec are much more likely to follow the college-to-university path due to the structure of the CEGEP system (see Box 2) in that province: 83% of those who followed the college-to-university pathway went to high school in Quebec versus 17% from the rest of Canada. Nonetheless, this latter group contained too few respondents to stand alone and since their most recent credential was from a university program, it made sense to place them in Path 6 rather than Path 5. As a result of small sample size, Path 7 combines youth who obtained a trade certificate or some other type of postsecondary degree or diploma, regardless of whether there was a gap between the end of high school and the start of postsecondary studies. If the sample size had been larger, it would have been interesting to put these two paths into their respective gap/non-gap pathways since the presence of a gap after high school more than likely indicates a greater chance that these youth have had some type of labour market experience prior to undertaking their postsecondary studies.

Box 2

Quebec's CEGEP system

The high school and postsecondary systems in Quebec differ from the other provinces in ways that are important to an analysis of school-to-work transitions. First, the last year of high school in Quebec is Secondary V, which would be equivalent to grade 11 in other provinces. In the rest of the country, the last year of high school is grade 12. Thus, youth in Quebec normally graduate high school in the year they become 17, one year earlier than age 18 which is typical in other provinces.

After high school, youth in Quebec typically enter the CEGEP (Collège d'enseignement général et professionnel) system. In CEGEP, youth may choose to pursue a program which is the prerequisite for university and which is normally completed in two to three years. Or, they could choose to pursue a college-level program, typically a three-year program as an end in itself.

Consequently, compared to youth in other provinces, youth in Quebec typically finish high school and start their postsecondary studies one year earlier, and, if they choose to go to university, start university one or two years later.

Meanwhile, 'gappers' – Paths 8 to 10 (and part of 7) are broken down similarly to the non-gapper pathways. Path 8, as we saw with Path 4, includes youth who had started a postsecondary program but had not finished and were not currently enrolled as of December 2003. Lastly, Path 9 individuals have received a college diploma, while those in Path 10 have received at least a university degree as of December 2003. Due to a smaller overall sample size among gappers, individuals who obtained a college diploma and then a university degree could not be separately identified as they were with non-gappers; however, the end result is the same: both non-gappers and gappers each have three unique paths and each shares Path 7.

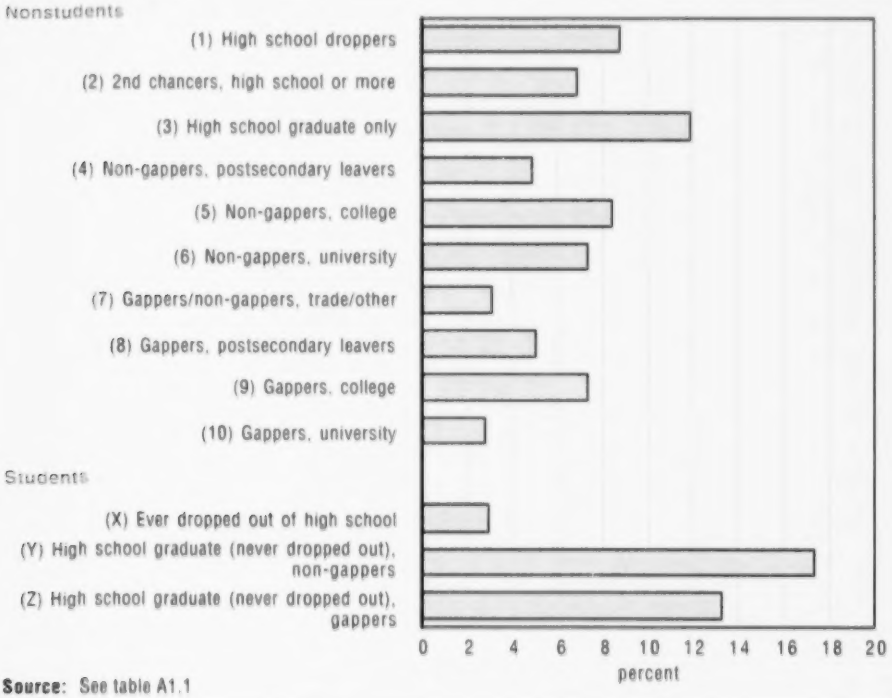
Chart 1.1 presents the proportion of the sample (weighted to represent the population) that followed the particular pathways from education to the labour force. To ease the transition from Figure 1.2 to the labelling strategy used in the remainder of the report, we attach the pathway number from Figure 1.2 to the labels in Chart 1.1. Most labels are fairly intuitive; however, to reiterate, we use the terms 'gapper' and 'non-gapper' to identify respondents who did not go straight to postsecondary studies from high school (gappers) from those who did (non-gappers). Furthermore, in Chart 1.1 we include the three student pathways (X,Y and Z from Figure 1.2) in order to have a more realistic representation of the proportion who follow particular pathways.

In general, when considering non-students in December 2003, we observe that the most frequent path from education to the labour market (representing over 136,000 individuals or almost 12% of 22 to 24 year-olds) is for those who have only a high school diploma. This should not be interpreted to mean that Canadian youth are more likely to stop their education at the high school level; rather, this is due in part to the fact that PSE graduates are split into five categories (college/university/other and, for the former two, gapper and non-gapper) and in part to the age of this particular population when we assess their labour force status. The target population for our analysis is between ages 22 and 24 in December 2003 and so many who have obtained a high school diploma are still in school, in some form of postsecondary education; others who are not in school at this point and who only have a high school diploma may return to obtain more education at a later date. For instance, we observe that about 30% (Paths Y and Z) of all respondents were still in

a postsecondary program in December 2003. Meanwhile, 3% of respondents had dropped out of high school at some point and were currently enrolled in an educational program (Path X). Among non-students in December 2003, another frequent pathway includes high school dropouts who had not returned to school to obtain their diploma (8.8% of all respondents). In contrast, about 7% were 'second chancers,' that is, they had dropped out of high school at some point and then returned to obtain at least a high school diploma (some even went onto a postsecondary program).

Chart 1.1

Proportion of YITS respondents who follow particular school-to-labour market pathways


Nonstudents
(1) High school droppers
(2) 2nd chancers, high school or more
(3) High school graduate only
(4) Non-gappers, postsecondary leavers
(5) Non-gappers, college
(6) Non-gappers, university
(7) Gappers/non-gappers, trade/other
(8) Gappers, postsecondary leavers
(9) Gappers, college
(10) Gappers, university
Students
(X) Ever dropped out of high school
(Y) High school graduate (never dropped out), non-gappers
(Z) High school graduate (never dropped out), gappers
0 2 4 6 8 10 12 14 16 18 20
percent

Source: See table A1.1

The remaining paths represent respondents who obtained at least some postsecondary education. It is not surprising to note that of these, the most popular pathway is for non-gappers who obtained a college diploma by December 2003 (8.4% of all respondents). The time taken to complete a college diploma is less than a university degree, especially if there was no gap between high school graduation and the start of the college program. With this in mind, it is interesting to note that there were about equal proportions of non-gappers who had obtained a university degree (7.3%) and gappers who had obtained a college diploma (7.3%). It is also not surprising, however, to find the lowest proportion among Pathway 10: gappers who had obtained a university degree. Only 2.8% of the sample, representing just over 32,000 individuals, followed this route to the labour market as of December 2003. We see a very similar number (35,260) of individuals who had obtained a trade certification or other type of certificate/diploma/ degree (such as private business schools and certificates from professional associations). Unfortunately, due to the

small sample size, we could not split these individuals by whether they had taken time off between high school graduation and start of a postsecondary program.

Lastly, we find that about 10% of the cohort had started a postsecondary program but had left it prior to December 2003 (both gapper and non-gapper PSE leavers). At the time of assessing their labour market status in December 2003, these individuals were not in a postsecondary program; however, this does not mean that they will not return. They are an important group though since they make up over 110,000 individuals and are likely more vulnerable without the added benefit of having the completed credential in hand.

1.3.2 Students

In addition to chronicling the relationship between the pathways from school to the labour market for non-students in December 2003, it is useful to examine those who were students during this month. Students in December 2003 are represented by the X, Y, and Z paths from Figure 1.2. Due to the relatively young age of this sample, this is a necessary step so that we have a better idea of which path the current students are following and where these students may be when they leave the education system. In Table 1.1, we focus on the highest level of postsecondary education students have taken (but not necessarily completed) across all programs and institutions depending on which of the three paths they followed. For instance, we observe that the majority of students in the X pathway had not attended any postsecondary program and were currently enrolled in high school (almost 37%) or had attended at the college level (35%). Interestingly, about 20% of individuals who had dropped out of high school at some point were attending a university program. Thus, it is promising to observe that over 60% of current students who ever dropped out of high school had returned to continue their studies at the postsecondary level.

Box 3

Removing students in December 2003

Labour force status was assessed in December 2003 when respondents were between the ages of 22 and 24. Any individual still in school, either high school or postsecondary, and either part-time or full-time, was excluded from the analysis in chapters 2 to 4. It is true that many youth combine school and work; however, a main purpose of this project was to assess the labour market outcomes for those youth who were no longer in school. As a result, respondents still in school in December 2003 were removed from the analysis. Some of the youth who were not students in December 2003 may eventually return to school, but the decision was made to take a 'snap shot' of labour force status at a particular point in time. The weighted population size was 1,147,422 individuals of which 66% (762,119) were non-students in December 2003; 34% (or 385,303) were students and were subsequently removed from the analyses involving labour force involvement in December 2003.

The pattern for the Y and Z paths are indicative of the time it takes to complete a university degree versus a college diploma. For example, students who followed the non-gapper path were overwhelmingly (over 70%) situated in university programs, whereas for gappers, the proportion was much less at about 57%. In contrast, almost 30% of gappers had enrolled in a college program, while less than 13% of non-gappers followed this path. We also observe that a higher proportion of gappers than non-gappers had taken some other type of diploma or certificate program.

Table 1.1

Highest level of post secondary education taken across all programs and institutions for respondents who were students in December 2003

Pathway	X Ever dropped out of high school	Y Non-gappers	Z Gappers
		percent	
No postsecondary (still in high school)	36.9	...	...
Other diploma/certificate/apprenticeship Includes vocational, private business school, registered apprenticeship programs, professional associations such as accounting or business	4.8[E]	1.1	4.4
College Includes college or CEGEP, university transfer programs, college post-diploma	35.3	12.6	29.9
University Includes university diploma below bachelor's, bachelor's degree, first professional degree	20.5	71.1	57.6
University above bachelor's Includes graduate level diploma above bachelor's (master's and PhD)	F	14.9	8.0
Total	100.0	100.0	100.0
Number	34,224	197,820	152,187

... not applicable

E use with caution

F too unreliable to be published

Note: Percentages in table may not add to 100 due to rounding.

Table 1.2 presents the relationship between the three separate student pathways by various pertinent background factors. We observe that approximately 9% of those who were students in December 2003 had ever dropped out of high school; over 50% had never dropped out and had not delayed the start of a postsecondary program following high school graduation; and about 40% had delayed the start of postsecondary studies. Females were more represented among non-gappers and less among gappers and high school dropouts. Meanwhile, Aboriginal youth more often dropped out of high school or delayed going to a postsecondary program. In terms of place of birth, there is little difference for high school dropouts; however, those born outside Canada were less represented among non-gappers, but more often followed the gapper pathway. The results for mother tongue and province of high school are essentially mirror images of each other. For example, individuals whose mother tongue was French and those who attended high school in Quebec more often followed a non-gapper pathway, while these groups were less represented among the gapper pathway. As noted earlier, these patterns are largely a function of Quebec's CEGEP system.

Table 1.2
Background demographic characteristics of respondents who were students in December 2003

Background factor	X Ever dropped out of high school	Y Non-gappers	Z Gappers	Total	
		percent		percent	number
Total	8.9	51.6	39.5	100.0	385,303
Sex					
Female	8.2	54.4	37.4	100.0	202,251
Male	9.7	48.5	41.8	100.0	183,050
Aboriginal					
Yes	27.3[E]	24.5[E]	48.2	100.0	5,261
No	8.7	52.1	39.3	100.0	377,066
Birthplace					
Canada	9.1	52.5	38.4	100.0	339,536
Elsewhere	7.9[E]	44.1	48.0	100.0	44,882
Mother tongue					
English	7.9	44.7	47.4	100.0	228,891
French	11.9	69.2	18.9	100.0	96,192
Other	8.0	49.5	42.6	100.0	59,626
Last province of high school					
Quebec	12.4	71.8	15.8	100.0	98,703
Rest of Canada	7.7	44.6	47.7	100.0	286,487

[E] use with caution

Note: Percentages in table may not add to 100 due to rounding or within variable population totals may not equal 385,303 because of different amounts of missing data per variable.

1.3.3 Analysis plan

This report builds on the basic pathway descriptions of non-students in December 2003 by first determining the major factors that help predict who follows which path. Following this, we turn our attention to studying how these pathways relate to 'success' in the labour market. Specifically, the remainder of the report is organized as follows:

Chapter 2 analyzes how background factors predict which school-to-labour market path young adults aged 22 to 24 passed through by December 2003; these background factors are for the most part static categories that do not change (for example, sex, age, ethnicity, parental education, etc.)

Chapter 3 introduces various 'intervening' factors measured during high school (for example, grade-point average, working in high school, etc.). These factors are thought to be important for possibly mediating the effect of the prior background measures on predicting the school-to-work transitions.

Chapter 4 shifts the focus of the analysis from looking at predictors of the school-to-work pathways to using the pathways as an indicator of labour market outcomes. In this chapter, we are able to determine whether certain paths are more or less successful for employment, as well as landing respondents 'good' jobs, defined in terms of earnings and level of job satisfaction. We are also able to determine in which occupation they worked during December 2003.

Chapter 5, the concluding chapter, synthesizes the findings and analysis.

2. Important background factors associated with education-to-labour market pathways

In this chapter, we describe and analyze the major background factors that lead respondents in YITS to follow particular pathways from school to the labour force. Knowing the main factors leading Canadian youth down particular paths from school to the labour market is important since it can help address any potential issues arising early in the life course. Past work has found that numerous factors, including those at the demographic, ethnic/cultural, family, and geographic level are all important for determining educational outcomes (Ali and Grabb 1998; Krahn and Hudson 2006).

To ease presentation, the background factors are separated into three main categories: (1) demographic, (2) linguistic and province of high school and (3) family characteristics.

(1) At the demographic level are sex, age, urban residence, visible minority status, birthplace, Aboriginal status, and presence of a condition limiting school or work. Sex is an important factor to consider since we know that women outnumber men at universities (Clark 2000; Zeman, Knighton and Bussière 2004) and are more likely than men to finish college (Buchmann and DiPrete 2006). In terms of age, the YITS cohort is comprised of individuals who were aged 18 to 20 in 2000 and while this is not a very large age range, a one-year difference can have quite different results when examining labour force status in December 2003. Urban residence needs to be considered as well given the discrepancy in academic performance of rural and urban youth (Cartwright and Allen 2002), as well as the potential employment options available to them in early adulthood. The remaining demographic measures are meant to tap into cultural factors. For instance, we include an indicator of whether the individual was born in Canada or elsewhere. YITS has very detailed country of birth information, but unfortunately, reliability of estimates becomes too unstable to separate countries outside Canada. We also include two measures of ethnicity: visible minority status and Aboriginal status. Visible minority status is very interrelated with immigration, yet this indicator helps identify any potential structural barriers that may exist. Aboriginal status is equally important given the gap in socioeconomic status, graduation rates and postsecondary attendance among this group. It should be noted that Aboriginal respondents in YITS are off-reserve only. Lastly, we include an indicator measuring whether the respondent has a long-term physical or mental condition that may limit work or school. Having a disability can have adverse consequences for both school attendance and working.

(2) We place mother tongue and province of high school into the same category given the close tie between them. Our measure of mother tongue is broken down into French, English, and neither French nor English. This last category helps capture some of the effects of immigration and ethnic origin not taken into account from the country of birth variable.

However, we also include a measure of province of last high school attendance; this may have been the province where they obtained their high school diploma or it may be the last province they went to high school prior to dropping out. This measure helps sort out the differences between the education systems of each province, especially Quebec and Ontario which are different from the others.[1] To take this provincial variation into account as much as possible, we include an indicator for each province. Since there were very few respondents in the northern territories, those from Nunavut were placed with Manitoba and those from the Yukon, with British Columbia; there were no respondents from the Northwest Territories.

(3) At the level of the family, we include three factors that help measure the resources and home environment of the youth: number of siblings, family type during high school, and parental education. The number of siblings is often used as a proxy for a dilution of resources in the family; all else being equal, the larger the family, the less money for each child's education. Family type is measured in high school and specifically indicates who the youth lived with most during high school. (We do not have any information on family of origin prior to this time period.) We have separate categories for intact two-parent families (which also include two-parent adoptive families), step-parent families, lone-parent families, and a category for other family types that did not fit neatly into the first three categories. Lastly, due to the strong intergenerational education connection (de Broucker 2005b; Frenette 2007) we also include an indicator of the highest level of education of either parent categorized as less than high school, high school only, some postsecondary, and graduated with a postsecondary credential.

We now move onto the analytical portion of this chapter. First, we present descriptive statistics of these background factors across the ten separate school-to-work pathways. In the second section, we present analysis of a multinomial logistic regression on a collapsed five-category pathway variable.

2.1 Descriptive analysis

Tables 2.1, 2.2 and 2.3 contain the cross-tabulations of the demographic, linguistic and province of high school, and family factors, respectively, by the ten-category education-to-labour market pathway variable. The tables are presented such that the row percentages total 100% and the population size that the row is based on is given at the extreme right side of the table. We include in the top row the percentages for the entire sample, which serve as useful references for the proportions that are collapsed into smaller categories. We separate the findings into the three major areas highlighting the most pertinent relationships.[2]

2.1.1 Background demographic characteristics

Table 2.1 shows that there is a gendered dimension to the pathway taken from school to the labour market. For instance, a much greater proportion of males than females drop out of high school (16.9% vs. 9.3%) or only have a high school diploma (20.4% vs. 15.0%). Conversely, a greater proportion of young women obtain a college diploma (15.6% vs. 10.2%) or a university degree (13.0% vs. 8.6%) without taking time off between high school and the start of a postsecondary program. These gender effects are well established in prior research on educational attainment

among recent Canadian cohorts (Clark 2000; Zeman et al 2004). In terms of age, we see an expected effect: younger cohort members are less represented than older cohort members among those who obtained either a college diploma or a university degree. We also find that a lower proportion of youth from urban areas drop out of high school, while a greater proportion obtain university degrees than their rural counterparts. This is in line with previous research (Andres and Looker 2001).

The cultural indicators also reveal important descriptive differences. For instance, almost 17% of visible minority youth obtained a university degree after going directly from high school to a postsecondary program, whereas only 10% of non-visible minority youth followed the same route. Non-visible minority youth, however, appear to be more represented among those who obtain a college diploma or who do not obtain more than a high school diploma. Due to the strong links between place of birth and visible minority status, it is not surprising to see a very similar pattern emerge for those born in or outside Canada: those born elsewhere are more represented among paths taken that culminate in a university degree. The number of Aboriginal youth in the sample does not allow the proportions found in some paths to be reported (only 3.1% of the sample or 23,834 of the population are Aboriginal); however, from the paths that are reportable, we are more likely to see Aboriginal youth represented among the high school dropouts, the 2nd chancers, and among those who only have a high school diploma.

Lastly, we observe that only about 62,000 individuals (about 8% of the sample) have a long-term physical or mental condition affecting work and school; those who do are more represented among high school dropouts and 2nd chancers, and less represented among non-gapper paths. There is surprisingly little difference, however, for the postsecondary leavers; those who have or do not have a limiting condition follow the paths towards leaving postsecondary studies without completion in about equal proportions.

2.1.2 Linguistic and province of high school characteristics

In Table 2.2, we isolate the relationship between mother tongue, province of high school and education-to-labour market pathway, since language and province are closely linked. Speaking French, for example, is very closely tied to living in the province of Quebec. Moreover, Quebec's CEGEP system is different from the education systems found in other provinces of Canada. Quebec youth typically have only eleven years of primary and secondary school and then the majority enter CEGEP which is required for further study at the college or university level. As a result, French speakers are disproportionably represented among the non-gappers who obtained a college diploma (22.9% vs. less than 10% for English speakers). A very similar relationship is noted when considering province of high school: 24% of students who went to high school in Quebec followed a non-gapper with college-diploma path. In contrast, most other provinces have a proportion much below this. This same discrepancy between Quebec and the rest of Canada is observed in the much lower proportion of students from Quebec who only obtain a high school diploma (9.5% vs. as high as 27.7% in Alberta for example). A similar pattern is noted for language but is not as strong since not all high school students in Quebec speak French and not all outside of Quebec speak English.

2.1.3 Background family characteristics

Table 2.3 includes three indicators related to the family of origin: number of siblings, family type, and parental education. Generally consistent with a resource dilution hypothesis, past research finds that a greater number of siblings reduces educational attainment. This is found here as well. We observe that a greater proportion of youth who drop out of school have more siblings (17.2% for three plus, vs. 10.9% for one). A similar pattern emerges for those who obtain only a high school diploma. The relationship, however, appears to be slightly weaker among the other pathways.

In terms of family type, we find that in high school, the majority of 22 to 24 year-olds had spent most of their time with two parents (71%). These youth appear to be more represented than those from non-intact families among non-gappers who obtain either a college diploma or a university degree and less represented among high school dropouts. Lastly, we witness a strong intergenerational education link: parents with low education tend to have teens who are more represented among high school dropouts. For example, 25% of the cohort whose parents' highest level of education was less than high school were part of the high school dropper pathway. Conversely, only 7.4% of youth who had at least one parent who was a postsecondary graduate followed this path. At the other extreme, less than 6% of youth with low-educated parents followed the non-gapper university path, whereas almost 18% of youth with highly-educated parents followed this path.

2.2 Multinomial logistic regression analysis

In this section, we determine the importance of various background factors for the likelihood of following a particular school-to-labour market pathway. To facilitate this analysis, we further collapsed the ten pathways from Figure 1.2 (also see Chart 1.1) into five pathways. While this loss of information was unfortunate, it was necessary in order to realistically estimate multinomial logistic models. Using any more than five categories for a dependent variable becomes too cumbersome and difficult to interpret. As it stands, using five pushes the analysis to the limit of interpretability. Nonetheless, we felt that collapsing further would have led to undue bias since we would have been mixing paths that are too different.

The paths that remain as categories for the dependent variable are as follows:

(1) High school droppers: respondents who dropped out of high school and who never went back to obtain their diploma prior to entering the labour force (Path 1 from Figure 1.2).

(2) 2nd chancers: respondents who had ever dropped out of high school, but returned at some point to obtain a high school diploma or who took some postsecondary education (perhaps even completing a postsecondary program) prior to entering the labour force (Path 2 from Figure 1.2).

(3) High school only: respondents who never dropped out of high school, but who also never attended any type of postsecondary institution prior to entering the labour force (Path 3 from Figure 1.2).

(4) Non-gappers: respondents who never dropped out of high school and entered a postsecondary program directly (within 4 months) after obtaining their high school diploma prior to entering the labour force (Paths 4 to 7 from Figure 1.2).

(5) Gappers: respondents who never dropped out of high school and entered a postsecondary program more than four months after obtaining their high school diploma (Paths 7 to 10 from Figure 1.2).

Readers should note that Path 7-Completed Trade/Apprenticeship or Other Type of Program in Figure 1.2 combined gappers and non-gappers; however, for purposes of the multinomial analysis, we returned them to their respective broader pathways.

Our strategy for collapsing the pathways for these sets of analyses pays particular attention to the gap between high school and the start of postsecondary studies. In other words, it highlights the linear versus the nonlinear paths. Another way to collapse would have been to use groupings based on eventual educational attainment (college or university). In this scenario, we would have retained categories 1, 2 and 3. However, new groupings would split those who have ever attended postsecondary programs into *postsecondary leavers*, *college graduates*, and *university graduates*. Furthermore, in this alternative set-up, trade/apprenticeship or other type of programs could be grouped with college graduates.

This latter alternative would help identify those youth who choose particular pathways leading to either college or university graduation. However, we leave this for future research. The current approach has merit in that we are able to determine which factors are important predictors for youth going directly to a postsecondary program after high school graduation or whether they take time off and gain work experience.

The multinomial logistic regression analysis is presented in Tables 2.4, 2.5 and 2.6 and follows the same logical pattern as Tables 2.1 to 2.3: basic demographic, linguistic and province of high school, and family factors are separated. However, it should be stressed that our models include all these factors. So, for example, the results involving the demographic factors in Table 2.4 are from regressions that also include the linguistic and high school province, as well as the family factors.

Since our dependent measure has five categories, we have more than one reference group, which adds to the richness as well as to the complexity of these models. The choice of reference category is arbitrary in these models, yet it is often chosen for substantive reasons. For example, a possible choice is to use high school droppers as the reference category since these are likely the most vulnerable of the five groups. However, the pathways that lead to completion of postsecondary studies are very different for high school dropouts; it may be of interest to also assess differences among gappers and non-gappers, for example.

We present odds ratios which are interpreted as the likelihood (or risk) of the event occurring as compared to the reference category; odds ratios greater than 1 indicate a positive effect, while odds ratios less than 1 indicate a negative effect. We present analyses that use high school droppers as the reference category, which indicates that the estimates are compared to respondents who had dropped out of high school. For example, in Table 2.4, an odds ratio of 1.79 for females suggests that females are 79% more likely than males to be 2nd chancers as compared to high school dropouts. To examine differences between less heterogeneous groups, we can use the information already presented. For instance, to analyze the differences between estimates for female gappers and non-gappers, the odds ratio for gappers is divided by the odds ratio for non-gappers [2.14/2.72 = 0.79]. This implies that

females are about 20% less likely than males to follow a gapper path than a non-gapper path. The same logic applies to all other comparisons. We focus mainly on the results presented, which use high school droppers as the reference group, yet refer to other pertinent findings as appropriate. The Appendix presents the full results with estimates from all possible comparisons (see Tables A2.1 to A2.3).

Table 2.1

Background demographic characteristics of youth by education-to-labour market pathway

Pathway	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
Background factor	High school droppers	2nd chancers – High school or more	High school graduate only	Non-gappers – Postsecondary leavers	Non-gappers – College	Non-gappers – University	Gappers/non-gappers – Trade/other	Gappers – Postsecondary leavers	Gappers – College	Gappers – University	Total	
					percent						percent	number
Total	13.3	10.4	17.9	7.4	12.7	11.1	4.6	7.5	10.9	4.2	100.0	762,119
Sex												
Female	9.3	10.9	15.0	7.0	15.6	13.9	4.9	6.3	11.9	5.3	100.0	356,611
Male	16.9	10.0	20.4	7.7	10.2	8.6	4.4	8.6	10.1	3.3	100.0	405,507
Age in cycle 1												
Age 18	16.2	11.5	24.1	8.4	12.9	5.0	4.2	8.1	8.8	0.8	100.0	217,389
Age 19	13.3	10.6	16.9	6.6	11.9	12.4	4.4	8.1	10.8	5.0	100.0	259,063
Age 20	11.1	9.4	14.0	7.3	13.4	14.5	5.2	6.5	12.7	6.1	100.0	285,666
Visible minority												
Yes	12.5	12.6	14.1	7.4	9.6	16.8	3.5	8.0	8.9	6.6	100.0	80,050
No	13.4	10.2	18.3	7.3	13.1	10.4	4.8	7.4	11.2	3.9	100.0	679,754
Aboriginal												
Yes	23.4	20.3	21.4	F	6.5 [E]	F	F	3.6 [E]	F	F	100.0	23,834
No	13.0	10.1	17.7	7.5	12.9	11.4	4.7	7.6	10.9	4.3	100.0	732,176
Birthplace												
Canada	13.0	10.2	18.3	7.6	13.0	10.7	4.8	7.5	11.0	4.0	100.0	704,443
Elsewhere	17.1	12.7	13.1	4.8	9.2	16.0	F	7.7	10.0	6.9	100.0	55,928
Urban residence, cycle 1												
Yes	12.3	10.9	17.0	7.4	12.2	12.2	4.3	8.0	11.1	4.6	100.0	570,854
No	16.5	8.9	20.6	7.4	14.3	7.4	5.6	5.9	10.4	3.1	100.0	190,225
Presence of long term limiting condition, cycle 1												
Yes	22.5	19.2	19.1	6.6	5.1	5.4	2.9 [E]	7.8	8.7 [E]	F	100.0	62,024
No	12.5	9.7	17.8	7.4	13.4	11.6	4.8	7.5	11.1	4.4	100.0	698,956

[E] use with caution

F too unreliable to be published

Note: Percentages in table may not add to 100 due to rounding, or within variable population totals may not equal 762,119 because of different amounts of missing data per variable.

Table 2.2

Background linguistic and province of high school characteristics of youth by education-to-labour market pathway

Pathway	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
Background factor	High school droppers	2nd chancers – High school or more	High school graduate only	Non-gappers – Postsecondary leavers	Non-gappers – College	Non-gappers – University	Gappers/non-gappers – Trade/other	Gappers – Postsecondary leavers	Gappers – College	Gappers – University	Total	
					percent						percent	number
Total	13.3	10.4	17.9	7.4	12.7	11.1	4.6	7.5	10.9	4.2	100.0	762,119
Mother tongue												
English	11.3	9.6	21.1	6.6	9.6	11.1	5.1	8.4	12.8	4.6	100.0	503,410
French	16.7	12.1	11.1	10.2	22.9	9.0	4.0	5.3	7.3	1.5	100.0	183,861
Other	18.2	11.7	13.1	5.5	8.7	16.3	3.4[E]	7.1	7.4	8.5	100.0	73,008
Last province of high school												
Newfoundland and Labrador	10.7[E]	7.3[E]	17.8	7.9	10.8	14.8	10.8	4.7	10.4	4.8[E]	100.0	16,931
Prince Edward Island	F	F	26.0	5.5[E]	11.5	14.2	F	4.5[E]	8.5	F	100.0	4,504
Nova Scotia	9.2	7.0	15.7	11.1	14.4	18.7	8.0	7.9	6.7	1.5[E]	100.0	25,665
New Brunswick	9.2	5.2	25.7	6.3	11.1	14.9	9.2	3.6	13.3	F	100.0	21,617
Quebec	17.9	12.5	9.5	10.0	24.0	9.7	3.7	5.2	6.3	1.2[E]	100.0	178,205
Ontario	10.3	10.8	17.5	6.2	11.2	8.8	3.2	9.4	15.1	7.7	100.0	266,247
Manitoba	14.5	12.1	20.0	6.4	6.3	14.0	5.2	8.6	9.2	3.7	100.0	30,591
Saskatchewan	7.7	8.7	24.5	8.6	9.0	16.8	5.7	8.0	8.0	3.1	100.0	30,929
Alberta	15.0	9.7	27.7	5.0	5.5	9.5	5.0	7.9	12.1	2.6	100.0	86,591
British Columbia	14.7	9.4	21.5	7.0	6.8	14.0	6.4	6.9	9.5	3.9	100.0	98,761

[E] use with caution

F too unreliable to be published

Note: Percentages in table may not add to 100 due to rounding, or within variable population totals may not equal 762,119 because of different amounts of missing data per variable.

Table 2.3

Background family characteristics of youth by education-to-labour market pathway

Pathway	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
Background factor	High school droppers	2nd chancers – High school or more	High school graduate only	Non-gappers – Postsecondary leavers	Non-gappers – College	Non-gappers – University	Gappers/non-gappers – Trade/other	Gappers – Postsecondary leavers	Gappers – College	Gappers – University	Total	
					percent						percent	number
Total	13.3	10.4	17.9	7.4	12.7	11.1	4.6	7.5	10.9	4.2	100.0	762,119
Number of siblings												
None	14.2	17.3	14.4	6.0	12.1	12.6	F	6.2	6.3	5.3	100.0	49,470
One	10.9	8.1	16.4	8.2	14.9	12.4	4.9	7.2	12.4	4.5	100.0	287,402
Two	12.9	10.4	18.1	7.1	12.2	11.9	4.7	7.4	10.3	5.0	100.0	230,846
Three or more	17.2	12.0	20.8	6.7	10.2	7.6	3.8	6.2	10.8	2.7	100.0	192,811
Family type in high school												
Intact family	10.8	7.9	17.6	7.4	14.2	13.2	5.0	7.5	11.5	5.0	100.0	536,079
Step-parent family	16.8	11.9	20.9	6.4	8.4	3.1	4.8	8.0	17.9	F	100.0	50,165
Lone parent family	20.2	17.0	18.0	7.4	10.0	6.9	3.4	7.7	7.0	2.5	100.0	142,098
Other family type	15.0	22.2	18.4	9.1	7.9 E	7.1	3.9 E	F	7.8	F	100.0	29,483
Parent's highest level of education												
Less than high school	25.0	14.7	19.5	5.9	9.6	5.3	3.0	5.9	9.6	1.6 E	100.0	95,303
High school	14.9	11.2	25.2	6.7	12.1	5.7	5.4	6.2	10.4	2.3	100.0	226,567
Some postsecondary	7.7	8.1	19.9	7.3	13.5	9.6	6.3	11.0	13.9	2.6 E	100.0	58,345
Postsecondary graduate	7.4	8.5	11.9	8.5	14.5	17.9	4.4	8.1	11.9	6.9	100.0	334,379

E use with caution

F too unreliable to be published

Note: Percentages in table may not add to 100 due to rounding, or within variable population totals may not equal 762,119 because of different amounts of missing data per variable.

2.2.1 Background demographic factors

Using high school dropouts as the reference allows for comparison with the most vulnerable group making the transition into the labour force. More often than not these individuals are more likely to become unemployed or to experience very low paying and unsatisfactory jobs (de Broucker 2005c). Across all comparisons, women are less likely than men to be high school droppers (see Table 2.4). This is evident since the odds ratios for pathways other than high school dropout are greater than 1. For example, women are 79% more likely than men to be 2nd chancers than they are to be high school droppers. They are 30% more likely to have high school only, 172% more likely to go directly to a postsecondary program after high school graduation, and 114% more likely to delay attending a postsecondary program by more than four months after high school. That women are more likely than men to achieve higher levels of education is no surprise for this cohort and corresponds to recent trends in postsecondary attendance and graduation (Clark 2000; Zeman et al 2004).

Table 2.4

Multinomial logistic regression results predicting the likelihood of following school-to-labour market pathways: Background demographic characteristics

Background variable	High school droppers (reference)			
	2nd chancers	High school only	Non-gappers	Gappers
	odds ratio			
Female (Reference: male)	1.79***	1.30*	2.72***	2.14***
Age in cycle 1 (Reference: age 20)				
Age 18	0.94	1.37*	0.62***	0.57***
Age 19	0.97	1.15	0.83	0.85
Visible minority (Reference: not)	1.22	1.24	1.51	1.08
Canadian born (Reference: not)	0.99	1.57	1.49	1.08
Aboriginal (Reference: not)	1.53	0.71	0.34***	0.62
Urban residence in cycle 1 (Reference: rural)	1.52***	1.30*	1.35**	1.39**
Presence of long-term limiting condition, cycle 1 (Reference: no)	1.15	0.62**	0.30***	0.46***

* p<0.10, statistically significant at the 10 percent level

** p<0.05, statistically significant at the 5 percent level

*** p<0.01, statistically significant at the 1 percent level

Notes: Controls include the linguistic and high school province factors from Table 2.5 and the family factors from Table 2.6.

'High school droppers': dropped out of high school and never went back to school or received any type of postsecondary training.

'2nd chancers': had ever dropped out of high school but returned to attain at least their high school diploma.

'High school only': never dropped out of high school and never went to any type of postsecondary program after high school graduation.

'Non-gappers': never dropped out of high school and went directly (less than or equal to 4 months) to a postsecondary program after high school graduation.

'Gappers': never dropped out of high school.and did not go directly (greater than 4 months) to a postsecondary program after high school graduation.

Population size = 706,302.

Standard errors computed using 1000 bootstrap replicate samples.

The overall multinomial model is significant at the .01 level.

In terms of age, not surprisingly, the youngest members of the cohort are less likely to have had time to complete a post secondary program by December 2003. At the same time, an expected effect of living in an urban area is noted on educational attainment. For instance, youth from urban areas are more likely than youth from rural areas to have an education level at least at the high school level prior to entering the labour force in December 2003. We also observe very few significant effects for the ethnicity factors; in fact, on only one occasion is a significant effect noted beyond the 95% level. Specifically, Aboriginal youth are much less likely than non Aboriginal youth to go on to postsecondary studies immediately after high school than they are to drop out of high school. Lastly, an expected effect of having a long-term physical or mental condition on education is observed. Respondents with a long-term condition are almost 40% less likely to have high school only than to drop out of high school, and they are 70% and 54% less likely to follow a non-gapper or a gapper path, respectively.

2.2.2 Background linguistic and province of high school factors

In terms of mother tongue, individuals whose first language is neither English nor French are 54% less likely than Anglophones to have high school only than they are to be high school dropouts (see Table 2.5). In analysis not shown, we discovered that the effect of having French as the first language is completely removed when controlling for province of high school.

Table 2.5

Multinomial logistic regression results predicting the likelihood of following school-to-labour market pathways: Background linguistic and province of high school characteristics

Background variable	High school droppers (reference)			
	2nd chancers	High school only	Non-gappers	Gappers
	odds ratio			
Mother tongue (Reference: English)				
French	1.35	1.11	1.32	1.10
Other	0.85	0.46**	0.79	0.55*
Last province of high school (Reference: Ontario)				
Newfoundland and Labrador	1.14	1.29	2.15**	1.27
Prince Edward Island	0.31	0.77	0.85	0.29*
Nova Scotia	0.74	0.87	1.99***	0.60**
New Brunswick	0.45**	1.41	1.58*	0.70
Quebec	0.48***	0.26***	0.73	0.20***
Manitoba	0.77	0.76	0.77	0.47***
Saskatchewan	1.11	1.75**	2.17***	0.93
Alberta	0.55**	0.96	0.48***	0.44***
British Columbia	0.51**	0.84	0.65	0.43***

* p<0.10. statistically significant at the 10 percent level

** p<0.05. statistically significant at the 5 percent level

*** p<0.01. statistically significant at the 1 percent level

Notes: Controls include the linguistic and high school province factors from Table 2.5 and the family factors from Table 2.6.

'High school droppers': dropped out of high school and never went back to school or received any type of postsecondary training.

'2nd chancers': had ever dropped out of high school but returned to attain at least their high school diploma.

'High school only': never dropped out of high school, and never went to any type of postsecondary program after high school graduation.

'Nongappers': never dropped out of high school, and went directly (less than or equal to 4 months) to a postsecondary program after high school graduation.

'Gappers': never dropped out of high school, and did not go directly (greater than 4 months) to a postsecondary program after high school graduation.

Population size = 706,302.

Standard errors computed using 1000 bootstrap replicate samples.

The overall multinomial model is significant at the .01 level.

Education is a responsibility of the provinces and each has somewhat different systems of regulation and progression. For our purposes, we use Ontario as the province of comparison, since it elicits an interesting comparison not only with Quebec, but also with the other provinces. For the most part, we find that respondents who went to high school in Quebec are less likely than respondents from Ontario to go beyond high school than they are to drop out of high school. For instance, they are 52% less likely to be 2nd chancers, 74% less likely to have high school only, and 80% less likely to be gappers than they are to be high school dropouts who never returned to school. Quebec students, however, are no different from Ontario students when it comes to being non-gappers versus high school dropouts. Interestingly, a remarkably similar pattern to Quebec is noted for Alberta. Compared to youth from Ontario, youth who went to high school in Alberta are 45% less likely to be 2nd chancers, 52% less likely to be non-gappers, and 56% less likely to be gappers than they are to drop out of high school. Conversely, as compared to youth who went to high school in Ontario, youth from Newfoundland and Labrador, Nova Scotia, and Saskatchewan are more likely to be non-gappers than high school droppers.

2.2.3 Background family characteristics

A fairly constant relationship is noted between having dropped out of high school and family size; that is, as family size increases, respondents are less likely to be 2nd chancers, non-gappers and gappers than they are to drop out of high school and never return (see Table 2.6). These findings tie into a broader literature in the social sciences, which shows that a negative relationship exists between family size and achievement (see Blake 1989 and Downey 1995, for example). In terms of family type during high school, the reference is intact (or more specifically two-parent, non-step) families and we see that for the most part, youth from step families and lone-parent families are less likely to follow pathways which lead to higher levels of education than youth from two parent/non-step families. A great deal of past research finds a similar negative effect, suggesting that the lack of resources and role models, as well as increased stress which often accompany these familial arrangements may adversely affect educational attainment (Frederick and Boyd 1998; Garasky 1995).

Table 2.6

Multinomial logistic regression results predicting the likelihood of following school-to-labour market pathways: Background family characteristics

	High school droppers (reference)			
Background variable	2nd chancers	High school only	Non-gappers	Gappers
	odds ratio			
Number of siblings (0 to 3 or more)	0.84*	0.96	0.80***	0.85**
Family type in high school (Reference: intact)				
Step-parent family	0.91	0.57**	0.33***	0.61*
Lone parent family	1.19	0.57***	0.40***	0.45***
Other family type	2.58**	0.93	0.68	0.73
Parental education (Reference: less than high school)				
High school	1.21	1.69***	1.80***	1.59**
Some postsecondary	1.66	2.35***	4.20***	3.76***
Postsecondary graduate	1.90***	1.71**	6.18***	4.27***

* p<0.10, statistically significant at the 10 percent level

** p<0.05, statistically significant at the 5 percent level

*** p<0.01, statistically significant at the 1 percent level

Notes: Controls include the linguistic and high school province factors from Table 2.5 and the family factors from Table 2.6.

'High school droppers': dropped out of high school and never went back to school or received any type of postsecondary training.

'2nd chancers': had ever dropped out of high school but returned to attain at least their high school diploma.

'High school only': never dropped out of high school and never went to any type of postsecondary program after high school graduation.

'Non-gappers': never dropped out of high school and went directly (less than or equal to 4 months) to a postsecondary program after high school graduation.

'Gappers': never dropped out of high school and did not go directly (greater than 4 months) to a postsecondary program after high school graduation.

Population size = 706,302.

Standard errors computed using 1000 bootstrap replicate samples.

The overall multinomial model is significant at the .01 level.

Parental education is typically a strong indicator of educational attainment in the next generation (Becker 1981) and the findings here are no exception. For example, youth who have a parent who graduated with a postsecondary degree or diploma are almost twice as likely to be 2nd chancers, about two thirds more likely to have high school only, over six times more likely to be non-gappers and over four times more likely to be gappers than they are to drop out of high school prior to entering the labour market. These results highlight the importance of role-modeling effects between educated parents and their children. As Lareau (1987) explains, better-educated parents are more adept at navigating the educational system and therefore, their children's eventual educational attainment may benefit. This also plays out in the current finding of a positive link between parental education and going directly to postsecondary studies following high school graduation. Highly-educated parents have instilled the idea in their children that it may be more important to continue with their studies, rather than taking time off to work.

2.3 Summary

Analyzing the factors predicting who follows which particular education-to-labour market pathway suggests several major differences across demographic, linguistic and province of high school, as well as family indicators. These results highlight pervasive demographic differences, some intriguing issues related to province of high school, as well as persistent familial influences.

- Females are less likely to follow the pathway of dropping out of high school and are more likely to go on to some type of postsecondary program prior to entering the labour force. They are also less likely than males to delay the start of a postsecondary program.
- In terms of ethnic background, the most salient finding is that Aboriginal youth are more likely than non-Aboriginal youth to leave the education system with a much lower level of attainment. Meanwhile, visible minority youth and those born outside Canada appear to be more represented than non-visible minorities and Canadian-born youth among those who graduate from university programs. This result did not hold under our multivariate analysis, however.
- The presence of a long-term limiting condition is a hindrance to further education; these individuals are much less likely to follow pathways leading to the completion of a postsecondary degree or diploma.
- The Francophone population is more represented among the non-gapper college path than their Anglophone counterparts; this effect was removed, however, in our multivariate analysis when controlling for province of high school. Youth who attended high school in Quebec were more likely than youth from Ontario to drop out of high school; yet, if they did graduate from high school and attend a postsecondary program, they were more likely to go directly following high school than their counterparts from Ontario.
- A greater number of siblings led to a greater risk of not finishing high school prior to the labour market, as does not living in an intact family (two-parent, non-step family) during high school. As well, the typical universally positive relationship between educational attainment levels across generations was found: youth with parents who have a high level of education were more likely to go to a postsecondary program prior to entering the labour market.

3. Linking intervening factors with education-to-labour market pathways

In this chapter, we introduce several pertinent factors measured during high school that may have an effect on the school-to-labour market pathway above and beyond the effects of the background factors seen in Chapter 2. For instance, from Chapter 2 we observed that gender, Aboriginal status, family type, and parental education were very important for predicting which pathway was followed. However, these background factors may be overshadowed by other factors, such as interest and engagement in the school system, as well as the influence from parents. The information is presented in a similar manner as Chapter 2; first we provide descriptive data on the relationship between various intervening factors and the ten school-to-labour market pathways. Then we use the five-category version of the pathways to estimate a multinomial model similar to the models seen in Tables 2.4 to 2.6.

We categorize the intervening factors into five groups:

1) Academic performance – Grade-point average (GPA) is measured during the last year of high school. Therefore this is a measure taken in most cases in grade 12; however, for those individuals who did not graduate from high school, it is in the year in which they dropped out. We categorize GPA into four categories: 80% to 100%, 70% to 79%, 60% to 69% and less than 50% to 59%. It should be stressed that grade-point average is self-reported; therefore, we may expect that some youth will inflate their overall GPA (Maxwell and Lopus 1994). It is, however, the best indicator of academic performance in the 18 to 20 year-old cohort of YITS.

2) Working status during high school – Working during high school has been linked to a greater risk of dropping out, but only at very high levels (Sunter 1993), while low to moderate levels are actually beneficial (Ruhm 1997). Therefore, similar to Bushnik (2003) we include a measure of how many hours per week on average the respondent worked for pay while in high school. This measure is separated into several categories: no hours, one to less than ten, ten to less than 20, and more than 20 hours per week. We recognize that in this latter category, we are combining youth who worked part time as well as full time; however, there were not enough cases to be more specific at the higher number of hours worked.

3) Family responsibility – We measure familial commitments that individuals have outside of school in two ways: the age at birth of the first biological child and the age of first conjugal union. These are obviously quite interrelated; however, they are distinct enough in that many teen births occur outside of a union, yet both are known to affect educational attainment. Having a child often removes the young adult from the education system, at least in the short-term; while many return, their overall educational level is often greatly affected (Clark, Dechman, French and MacCallum 1991). Furthermore, living with a conjugal partner may influence participation in an educational program since we know that these roles are often contradictory (Thornton, Axinn and Teachman 1995).

Age at birth of first biological child: In this dataset, the exact wording of the question (asked in Cycle 1 and updated in Cycles 2 and 3) is "Do you have any dependent children for whom you are financially responsible and/or have sole or joint legal custody?" This may include any conception leading to a live birth of a biological child or responsibility for a non-biological child (such as adopted, step or foster). If respondents said yes to having a dependent child, then the month and year of birth were requested. This information is known for both men and women. There were relatively few dependent children who were not biologically related to the respondent and so we chose to use only the timing of the birth of the first biological child. We collapsed this measure into four categories: less than age 19, age 19 to less than age 21, age 21 and over, and no biological birth prior to Cycle 3.

Age of first conjugal union: Respondents are asked in Cycle 1 whether they are in a partnership (either married or living with a partner [such as a common law partner or boyfriend, girlfriend]). If they said they were then they were asked the exact month and year this occurred. This information was updated to incorporate new partnerships as of Cycle 2 two years later. However, since we do not have this partnership history information in Cycle 3, we include an indicator of whether the respondent had their first conjugal union prior to age 19.

A caution regarding these family responsibility variables is warranted. We must keep in mind that the way in which they are measured encompasses the entire period of the pathways. For example, especially regarding the age of birth of the first biological child, we know that most people finish high school around age 18, yet we measure the age at birth of first child after this point while they are transitioning through education. Thus, we cannot make any clear causal claims regarding the effect of age at first birth and educational pathway; a similar, yet weaker, argument exists for the way we created age at first conjugal union. We only present these measures in order to highlight the association between potentially disruptive influences and the education-to-labour market pathways.

4) Parental expectations – The educational expectations parents place on their children can have very lasting effects for their overall educational attainment (Sandefur, Meier and Campbell 2006). In this dataset, respondents were asked in Cycle 1 how *important it is to their parents that they obtain more than a high school diploma*. The response categories are 'not important at all,' 'slightly important,' 'fairly important,' and 'very important.'

5) Mobility between province of high school and province of residence in Cycle 3 – The final intervening measure we include in the analysis is one related to interprovincial mobility. Generally, more mobile individuals have greater labour market success, especially when longer distances across provincial boundaries are considered. We have information on the province that respondents were in when they last went to high school (for most of the sample, this is the province where they obtained their high school diploma) and we know the province of residence in each cycle. Therefore, we are able to construct a measure of mobility if the high school province was not the same as the province of residence in Cycle 3. We isolate mobility to Alberta from that to other provinces since Alberta has experienced tremendous growth during this period and has acted as a magnet for young adults looking for work.

As with the family responsibility variables, we have a similar problem of not being able to identify a relatively clear causal relationship between mobility and pathway to the labour force. We measure mobility after leaving high school, while simultaneously measuring the pathway; this is not a major problem for correlational analysis but becomes more problematic when attempting to make causal linkages.

3.1 Descriptive analysis

Table 3.1 contains the cross-tabulations of the intervening factors listed above, by the ten-category education-to-labour market pathway variable. The tables are presented such that the row percentages total to 100 and the population size on which the row is based is given at the extreme right side of the table. We include in the top row the percentages for the entire sample, which serves as a useful reference for the proportions collapsed into smaller categories.

3.1.1 Academic performance

Not surprisingly, we find a very strong relationship between grade-point average (GPA) in the last year of high school and dropping out. The individuals who follow this pathway to the labour market only make up around 13% of the entire sample; however, 54% of youth who had a GPA of less than 59% follow this pathway. Comparatively, only 4.9% of youth who had a GPA of 80% to 100% followed the high school dropper pathway. A similar, yet weaker, association is seen for 2nd chancers and individuals who only had a high school diploma. Further evidence that those with low marks have a low rate of participation in postsecondary education is given by the inability to report proportions for pathways 4 to 10 for those with high school marks under 60%.

We observe a very interesting relationship between GPA and whether youth took time off between high school and a postsecondary program. For instance, close to 17% of youth with a high GPA were non-gappers who obtained a college diploma, whereas only about 9% of their gapper counterparts had the same GPA (incidentally this is even lower than the total sample proportion in the gapper-college pathway at 10.9%). At the same time, close to 7% of youth with a 60% to 69% GPA followed the non-gapper/college route, while almost 11% with the same GPA followed the gapper-college pathway. Youth with a very high GPA are generally more represented among the university pathways, regardless of whether a gap occurred. Thus, good marks during high school appear to indicate that youth may be more likely to enter a postsecondary program without delay after high school completion than if their GPA falls towards the mid-to-lower end of the distribution.

3.1.2 Working status during high school

Working during high school can be beneficial since it may help teens gain valuable job experience, while allowing them to learn greater responsibility. However, too many hours worked can indicate a disinterest in school or it may indicate a potentially troubling situation where teens have to work due to difficult financial constraints. As a result, their school work may suffer which may affect their chances of entering a postsecondary program, especially without delay from high school. Table 3.1 suggests that working some hours may be beneficial, while not working at all or too many hours may be harmful. For example, we find that teens who either worked no hours or more than 20 hours are more represented among high school dropouts

(around 15.5% compared to 13.3% for the entire pathway). This suggests that working some hours during high school is associated with a lower risk of dropping out. In fact, only 7.5% of teens who worked 10 to 20 hours followed the high school dropper pathway. Interestingly, the teens who worked many hours in high school are more represented among the 2nd chancers. For instance, 2nd chancers make up around 10% of the entire sample; however, about 13% of teens who worked twenty or more hours in high school followed this pathway. This is confirmed by past research which also found that working too few or too many hours during high school may hinder the transition to the labour market in early adulthood (Bowlby and McMullen 2002; Finnie, Lascelles and Sweetman 2005).

Table 3.1

Intervening characteristics by education-to-labour market pathway

Pathway	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
Intervening factor	High school droppers	2nd chancers – High school or more	High school graduate only	Non-gappers – Postsec-ondary leavers	Non-gappers – College	Gappers/ non-Non-gappers – University	gappers – Trade/ other	Gappers – Postsec-ondary leavers	Gappers – College	Gappers – University	Total	
					percent						percent	number
Total	13.3	10.4	17.9	7.4	12.7	11.1	4.6	7.5	10.9	4.2	100.0	762,119
Grade-point average in last year of high school (%)												
80 to 100	4.9	5.1	9.5	8.1	16.7	26.5	5.3	5.2	9.4	9.4	100.0	231,651
70 to 79	8.9	9.6	19.0	9.0	14.9	6.9	5.3	10.3	13.3	2.8	100.0	309,850
60 to 69	20.5	16.7	27.6	5.0	6.7	0.8	3.6	7.4	10.7	1.0 [E]	100.0	165,969
Less than 60	53.9	21.0	15.2	F	F	F	F	F	F	F	100.0	33,971
Average number of weekly hours worked for pay in high school												
None	15.5	10.4	16.3	7.5	13.6	13.3	3.9	7.3	8.2	3.9	100.0	278,398
1 to less than 10	11.0	9.2	16.4	7.4	12.4	14.5	6.6	7.0	11.1	4.3	100.0	123,171
10 to less than 20	7.5	7.4	17.4	7.5	15.8	12.3	3.5	8.5	14.5	5.6	100.0	157,963
20 or more	15.7	12.9	21.3	7.1	9.6	5.1	5.4	7.4	12.0	3.6	100.0	196,565
Age at birth of 1st biological child												
No birth	11.2	9.0	17.5	7.5	13.4	12.5	4.6	7.6	11.9	4.8	100.0	649,264
Less than age 19	35.0	37.4	14.6	F	F	F	F	F	F	F	100.0	19,931
Age 19 to less than age 21	33.7	18.8	21.8	5.3 [E]	5.9 [E]	F	F	3.5 [E]	F	F	100.0	31,820
Age 21 or greater	16.8	13.0	21.4	9.1	12.5	4.0 [E]	4.9	10.4	7.0	F	100.0	58,647
Had 1st conjugal union before age 19												
Yes	27.7	18.6	19.2	7.0	7.5	3.2 [E]	3.0 [E]	4.8	8.5	F	100.0	52,292
No	12.3	9.8	17.8	7.4	13.1	11.6	4.8	7.7	11.1	4.5	100.0	709,826
Importance to parents that child obtains more than high school												
Not at all	39.7	17.9	25.3	F	F	F	F	F	3.5 [E]	F	100.0	37,127
Slightly	25.7	13.6	31.6	3.9	4.3	2.7	3.9	5.6	7.5	F	100.0	86,680
Fairly	15.6	13.0	23.6	5.4	10.1	6.5	4.5	6.8	11.3	3.3	100.0	161,049
Very	7.5	8.0	12.8	9.3	16.3	15.0	5.0	8.5	12.1	5.5	100.0	466,592
Provincial mobility between high school and cycle 3												
Did not move	13.4	10.6	18.0	7.5	13.0	10.3	4.5	7.5	11.2	4.1	100.0	708,167
Moved to Alberta	14.9 [E]	6.7 [E]	21.3	6.7 [E]	10.4	15.4	7.9 [E]	5.2 [E]	8.3 [E]	F	100.0	21,056
Moved to other province	9.4 [E]	10.0	13.8	5.2	9.0	24.5	4.5 [E]	8.7	7.3	7.4 [E]	100.0	32,895

[E] use with caution

F too unreliable to be published

Note: Percentages may not add to 100 due to rounding, or within variable population totals may not equal 762,119 because of different amounts of missing data per variable.

We also witness the positive impact that working some hours in high school has on going directly to a postsecondary program after high school graduation; the effect is especially pronounced for those who obtain a college diploma, both with and without a gap. For instance, almost 16% of those who worked on average 10 to 20 hours a week followed the non-gapper college pathway; this pathway only made up 12.7% of the entire sample. At the same time, 14.5% of those who worked the same amount of hours followed the gapper-college pathway (which is close to 4 percentage points greater than for this entire pathway). Furthermore, we find that teens who worked a great deal during high school are less represented among both non-gapper groups that obtained a postsecondary credential; this is especially pronounced (only 5.1%) for university graduates in Path 6.

3.1.3 Family responsibility

In terms of the age at which an individual had their first biological child, a fairly clear pattern emerges: those who had a birth at a young age are overrepresented among high school droppers and 2nd chancers. High school droppers make up only about 13% of the sample, yet over 30% of individuals who had a child while under age 19 followed this pathway to the labour market. For 2nd chancers, the effect is even more pronounced: 2nd chancers make up only about 10% of the sample, yet 37% of those who had a child while under age 19 had dropped out of high school only to return and finish their studies. Having a child in the teenage years drastically altered the educational profile of these individuals. However, as a result of the rarity of teen births among those who have at least some postsecondary education, many of the proportions cannot be reported.

Having a union (either marital or common-law) prior to age 19 is also rare; the population count is slightly over 52,000 (or less than 7% of the entire sample). These individuals who partnered early are more represented among high school dropouts and 2nd chancers and are less represented among those who obtained a postsecondary credential, especially non-gappers who obtained a university degree before entering the labour market. There are many factors to consider, however, which our analysis cannot identify. For example, youth who live with their partner may be doing so to lower their monthly expenses, thus making it possible to remain in school. These youth who are struggling to pay bills may also be more likely to work during their education, prolonging the eventual graduation with a diploma or degree. Our analysis of the labour market ends in December 2003 when these individuals are between ages 22 and 24; as a result, many of these youth who are working or living with someone as a result of economic necessity may not have finished their education yet and as such are not part of our analysis sample.

3.1.4 Parental expectations

First, it should be noted that the majority of youth (population count is 460,000 or about 60%) feel that their parents think it is important that they obtain more than a high school diploma. The level of parental expectations is increased with higher levels of parental education and in intact two-parent families. It is lower in larger families and if the respondent has lower marks in high school.[3] When parental expectations are low, youth are more represented among high school dropouts, 2nd chancers, and those with a high school diploma only. The effect is especially pronounced for high school dropouts: they make up only 13% of the entire sample, yet close to 40% of the group whose parents did not think it was important at all to

continue beyond high school. Conversely, youth whose parents have higher expectations are more represented among those who obtain a postsecondary diploma or degree after not taking a break between high school and the start of their postsecondary studies.

3.1.5 Mobility between province of high school and province of residence in Cycle 3

Whether an individual moved to a different province between high school and Cycle 3 appears to have a weak association with pathway selection. However, two results are worth highlighting. First, about 24% of movers to other provinces followed the non-gapper university path, while only 10% of non-movers followed this path (about 15% of movers to Alberta followed this pathway). This may be an indication of the greater mobility a university degree gives young adults, especially for those youth who went directly from high school to a postsecondary program. Or it may indicate a greater desire to attend university out of province among non-gappers. Second, we observe that those with a trade certificate or some other type of diploma are more represented among movers to Alberta than non-movers and movers to provinces other than Alberta: 7.9% moved to Alberta, while only 4.5% moved to another province or did not move after leaving high school. Even though we combined quite diverse educational groups into this path, this result highlights the lure of Alberta for individuals with very specific job-related training.

3.2 Multinomial logistic regression analysis

In this section, we follow a similar procedure as in Section 2.3. We use a five-category pathway variable to estimate multinomial logistic regression equations. The five categories are: high school droppers, 2nd chancers, high school only, non-gappers and gappers. Our results are presented in Table 3.2. We present odds ratios which are interpreted as the likelihood (or risk) of the event occurring as compared to the reference category (high school droppers); odds ratios greater than 1 indicate a positive effect, while odds ratios less than 1 indicate a negative effect. In all models, we include the prior controls from the previous chapter.

3.2.1 Academic performance

We use a GPA of 70% to 79% as the reference and note a fairly consistent pattern when comparing all other pathways with those who drop out of high school and never return. Teens with very low to failing marks in high school are much less likely than those with mid-to-high average marks to be 2nd chancers, to have high school only, or to obtain a postsecondary diploma/degree than they are to be high school dropouts. In contrast, we also find the importance for postsecondary attendance of having an 80% to100% average versus a 70% to 79% average. For instance, youth with the highest GPA are over twice as likely as those with a mid-to-high average GPA of being a non-gapper compared to high school dropouts. This effect is also present for gappers but it is not as large, suggesting that students with higher marks may go directly to a postsecondary program as opposed to taking time off. Youth with higher marks also are more likely to go directly to postsecondary studies than delaying. For example, respondents with an average GPA of 80% to 100% are 40% less likely than youth with a 70% to 79% average GPA to delay going to a postsecondary program directly following high school graduation (1.62/2.69=0.60).

These effects are expected given what we know about the link between academic performance in high school, high school completion and postsecondary attendance. What is interesting to note is that these effects remain strong even when controlling for all the background factors and other intervening factors. The effects of sex, ethnicity, parental education, as well as the others cannot remove the effect of good marks.

3.2.2 Working status during high school

We use 'did not work for pay' in high school as the reference group in our models and we found only a few significant differences among pathways. Youth who worked twenty or more hours per week were 44% less likely than youth who did not work to follow the non-gapper path than they were to be high school dropouts. The effect is similar, yet weaker, for following the gapper path. We found a similar relationship in the previous descriptive section. It is interesting that this relationship appears to hold for youth who worked a substantial number of hours even after controlling for all the important background variables.

When focussing only on those who attend postsecondary programs, we find that teens who worked over twenty hours per week in high school are about 32% more likely than teens who did not work to delay their postsecondary attendance (0.74/0.56=1.32). This result ties in with the previous findings that working a large number of hours in high school leads to a greater risk of delaying education. It is important to stress again that this is after controlling for factors known to affect educational attainment and working in high school, such as grade-point average, having a teen birth and parental education. Unfortunately, our data do not include family income during the high school years so we cannot assess whether this effect would be removed by having an indicator of financial need during high school.

3.2.3 Family responsibility

We use two measures to tap into family responsibilities during young adulthood: age at birth of first biological child and age at first conjugal union. We use no birth or partnership as the reference categories. It is important to reiterate the caution given in the earlier section regarding these variables. The timing of these family indicators occurs during high school as well as after high school and so are measured around the same time as our dependent pathway measure. This is an issue more with age at first birth than it is for age at first conjugal union since in the latter case, we use age 19 as the cut-off.

Using high school droppers as the reference category, we observe that age at birth of the first biological child and age at first partnership have no impact on following a 2nd chance pathway. However, having a birth at a young age greatly affects the likelihood of following a path leading to higher educational attainment. For instance, youth who became parents while under age 19 are 95% less likely than those who had not become parents by Cycle 3 to follow a non-gapper path than to drop out of high school. This effect is also present for youth who form a conjugal partnership prior to age 19.

Table 3.2

Multinomial logistic regression results predicting the likelihood of following school-to-labour market pathways. Intervening characteristics

Intervening variable	High school droppers (reference)			
	2nd chancers	High school only	Non-gappers	Gappers
	odds ratio			
Grade-point average in last year of high school (%) (Reference: 70 to 79)				
80 to 100	0.91	0.89	2.69***	1.62**
60 to 69	0.79	0.57***	0.20***	0.33***
Less than 60	0.42***	0.11***	0.02***	0.03***
Average number of weekly hours worked for pay in high school (Reference: did not work)				
1 to less than 10	1.14	1.03	1.24	1.32
10 to less than 20	1.21	1.35	1.29	1.45*
20 or more	1.03	0.79	0.56***	0.74*
Age at birth of 1st biological child (Reference: no biological child)				
Less than age 19	0.87	0.22***	0.05***	0.05***
Age 19 to less than age 21	0.73	0.46***	0.14***	0.20***
Age 21 or greater	0.82	0.91	0.56**	0.59*
Had 1st conjugal union prior to age 19 (Reference: did not)	0.95	0.75	0.51**	0.57**
Importance to parents that child obtains more than high school (Reference: fairly)				
Not at all	0.65	0.51***	0.09***	0.22***
Slightly	0.73	0.86	0.44***	0.45***
Very	1.37	1.18	3.66**	2.19***
Provincial mobility between high school and cycle 3 (Reference: same province)				
Moved to Alberta	0.70	0.97	0.92	0.77
Moved to other province	1.08	0.91	1.04	0.88

* p<0.10, statistically significant at the 10 percent level

** p<0.05, statistically significant at the 5 percent level

*** p<0.01, statistically significant at the 1 percent level

Notes: Includes controls for sex, age, ethnicity, urban status, limiting condition, mother tongue, province of high school, number of siblings, family type during high school, and parental education.

'High school droppers': dropped out of high school and never went back to school or received any type of postsecondary training.

'2nd chancers': had ever dropped out of high school but returned to attain at least their high school diploma.

'High school only': never dropped out of high school and never went to any type of postsecondary program after high school graduation.

'Non-gappers': never dropped out of high school and went directly (less than or equal to 4 months) to a postsecondary program after high school graduation.

'Gappers': never dropped out of high school and did not go directly (greater than 4 months) to a postsecondary program after high school graduation.

Population size = 680,787.

Standard errors computed using 1000 bootstrap replicate samples.

The overall multinomial model is significant at the .01 level.

3.2.4 Parental expectations

In our models, we use the mid level of parental expectations as the reference category: young adults whose parents feel that it is 'fairly' important that their child obtain more than a high school diploma are contrasted with those whose parents have very low expectations ('not at all' and 'slightly important') and very high expectations ('very important').

Similar to our earlier descriptive findings, our multivariate models reveal that parental expectations matter for educational attainment. For instance, parents with the highest level of expectations compared to the mid-range level have children who are over three times more likely to be non-gappers than high school dropouts. At the opposite extreme, parents with very low expectations compared to the mid-range level have children who are about 90% less likely to be non-gappers than they are to be high school dropouts. The effect is present for gappers as well, but is not as distinct. Our results show that this strong influence of parental expectations exists even when controlling for parental education level, as well as family type. Interestingly, when comparing only those young adults who attend postsecondary institutions, we observe that youth whose parents have very high expectations are about 40% less likely (2.19/3.66=0.59) to delay going to a postsecondary program following high school; very low parental expectations have the opposite effect.

3.2.5 Mobility between province of high school and province of residence in Cycle 3

In none of our multivariate models is the measure of mobility between high school and Cycle 3 (ages 22 to 24) significant. There are two possible reasons for this. The first reason, which suggests that the effect of mobility on pathway selection is completely taken into account by the other variables in the model, is not very likely since in the bivariate case (not shown) this indicator was not significant either (except in the case of contrasting non-gappers university and 2nd chancers and even then, the effect was only significant at the 10% level). Our descriptive results in the previous section confirm this as well. The second reason, which is related to the temporal ordering of our measures, means that we cannot establish a clear cause and effect between mobility and pathway choice. In other words, our measure of mobility is assessed between high school and Cycle 3 and so occurs simultaneously with decisions to follow one particular pathway or another. In fact, for most of the high school droppers, their path was determined well before Cycle 3 and so moving provinces between high school and Cycle 3 could not have had an effect on this. Nonetheless, our analysis shows that there is a fairly weak association between interprovincial mobility following high school graduation and choice of school-to-labour market pathway.

3.3 Summary

The addition of the intervening factors to the analysis in this chapter led to some intriguing findings on possible reasons why individuals may follow one pathway to the labour market over another. Our indicators, grouped into five main categories, suggest that academic performance, working during high school, family responsibility and parental expectations were especially robust. It is important to keep in mind as well that all multivariate estimates were produced after controlling

for the influence of background factors from Chapter 2; thus, the significant effects of these intervening factors are present above and beyond a wide range of important prior indicators.

- Marks matter. A very strong relationship was found between grade-point average and dropping out of high school: youth with very low average marks in high school are much more likely than those with mid-to-high average marks to drop out of high school and not return. For youth who had attended postsecondary programs, very high marks predicted that the teen would go directly to a postsecondary program after high school rather than delaying.
- Working some hours in high school can be beneficial, while working a great number of hours (over 20) can be detrimental, leading to a greater risk of following a high school dropper path. Working over 20 hours a week in high school was also associated with teens delaying their attendance at a postsecondary institution following high school.
- Having an early birth or early conjugal union are rare events at these ages, yet individuals who had a child or entered into a conjugal union during their teenage years are more represented among the high school droppers and 2nd chancers and less represented among the paths leading to postsecondary attendance.
- Parental expectations regarding their child's education are generally high and higher expectations are associated with higher educational attainment, especially for youth who do not delay their attendance in a postsecondary program following high school graduation.

4. Linking educational pathways to labour market outcomes in December 2003

Up to this point, we have been thinking of pathways from school to the labour market as an outcome by focussing on the important determining factors identifying who is more likely to follow a particular pathway. These were important issues to raise and address; however, the prior analysis does not explain how young adults may actually perform in the labour market. We now turn our attention to addressing these concerns. We assess labour market outcomes in December 2003 since this is the last month for which we have information on aspects related to the jobs of YITS respondents. Recall that we assess the labour market experience of non-students only; cohort members who were still in school on either a part- or full-time basis in December 2003 are excluded from analysis.

The links between education and the labour market are well established. We know that young adults with very low levels of education (those without a high school diploma, for example) are much more vulnerable to low levels of employment and have a higher probability of working in low-skill, low-paying jobs (de Broucker 2005a). Conversely, information from the National Graduate Survey has led to a great deal of knowledge regarding the labour market outcomes of graduates from postsecondary institutions (university, college, and trade/vocational school). For example, Silver, Lavallée and Pereboom (2000) find consistently high levels of employment among university and college graduates. Finnie's (1999) findings are similar and he adds that the school-to-work transition should be viewed as a process rather than an event since outcomes need to be assessed at various points following graduation. Boothby's (2000) results suggest that trade-vocational graduates are less likely to be employed and also earn less than their counterparts with university or college credentials. Lastly, Wannell, Pereboom, and Lavallée (2000) add the important finding that there is little economic penalty for young adults who follow a direct versus an indirect pathway through postsecondary education to the labour market. Taken together, these past findings on education-to-labour market outcomes lead to the conclusion that having postsecondary education increases the likelihood of success in the labour market, but that not all postsecondary graduates experience the same benefits.

We focus our attention on several important labour market indicators in December 2003 in order to add to our general understanding of the process of school-to-work transitions among young Canadian adults. The two most salient for our purposes are: (1) to assess whether individuals are employed or unemployed and (2) to examine the total weekly earnings across all jobs worked in December 2003. For these two indicators, we present both a descriptive and a multivariate analysis. Additional outcomes such as job satisfaction and occupation in December 2003 are only analyzed descriptively.

This chapter is set up slightly differently from the preceding two. We do not separate the chapter into a descriptive section and a multivariate section, but instead divide the chapter based on labour market outcome. The sections for employment status and earnings include both a descriptive section and a multivariate section, while job satisfaction and occupation include only a descriptive section.

4.1 Employment status in December 2003

A basic question to ask at the outset is: are certain pathways more likely to be associated with employment? We know whether an individual is employed in December 2003, yet with these data we cannot discern any finer detail of labour market exposure. We cannot for example compute an unemployment rate similar to the Labour Force Survey since we do not know if respondents who were not working were available and looking for work.

4.1.1 Descriptive analysis

Table 4.1 presents the proportion of employed and non-employed respondents, based on the pathway they followed through to December 2003. First, it is important to note that almost 80% of the sample who were not in school were employed (representing 602,796 individuals). However, this employment rate is not spread evenly across the sample; by focussing on column 4, we observe the employment rate for each particular pathway. It appears that high school droppers have the lowest employment rate at 71.4%, followed by 2nd chancers at 72% and gappers-PSE leavers at 73.3%. In contrast, the highest employment rates are noted for youth who followed the gapper-college or university path and the non-gapper/college path.

Furthermore, on a very basic level, when we examine columns 2 and 3, we observe less variability than we might have expected. That is, many of the pathways have very similar proportions that are employed or not employed. For example, it appears that respondents are no more likely to be employed or not employed if they followed the high school graduate only, non-gapper PSE leaver or non-gapper university graduate paths. In contrast, high school droppers are more represented among the non-employed, as are 2nd chancers and gappers-PSE leavers. At the same time, gappers who obtained a college diploma or a university degree are more represented among those who were employed in December 2003. This same relationship is also witnessed for non-gappers with a college diploma.

It is important to keep in mind, however, that this descriptive analysis does not control for the time spent out of school and therefore does not account for potential work experience. For example, we know that youth who leave school much earlier, including those who dropped out, have had a greater amount of time and opportunity to gain work experience than those who have been in continuous schooling since high school (the non-gappers, for example). We address this in the following section.

Table 4.1
Respondent's employment status in December 2003, by education-to-labour market pathway

Education-to-labour market pathway	Employment status		Total sample	Employment rate
	Not employed	Employed		
			percent	
(1) High school droppers	18.2	12.0	13.3	71.4
(2) 2nd chancers – High school or more	14.0	9.5	10.4	72.0
(3) High school graduates only	17.4	18.0	17.9	79.6
(4) Non-gappers – Postsecondary leavers	7.4	7.3	7.4	78.9
(5) Non-gappers – College	9.1	13.7	12.7	85.1
(6) Non-gappers – University	10.8	11.1	11.1	79.6
(7) Gappers/non-gappers – Trade/other	3.8	4.8	4.6	82.8
(8) Gappers – Postsecondary leavers	9.6	6.9	7.5	73.3
(9) Gappers – College	7.2	11.9	10.9	86.2
(10) Gappers – University	2.5	4.7	4.2	87.5
Total	100.0	100.0	100.0	...
Population size	159,323	602,796	762,119	...
Percent of total	20.9	79.1	100.0	...

... not applicable
Note: Percentages in table may not add to 100 due to rounding.

4.1.2 Logistic regression of employment

To enable a more rigorous analysis of employment status, we estimate a logistic regression on the likelihood of being employed in December 2003. In Table 4.2, we present three separate logistic regression models (in all models we use high school droppers as the reference category). First, we include only the pathway variable. Next, we introduce a measure of 'opportunity for experience' operationalized as the number of months between the date last in school full time and December 2003. It is not a measure of actual experience since these individuals may not have been working; however, not being in school full time allowed for a greater 'opportunity' to work. Lastly, we control for all background and intervening factors from Chapters 2 and 3. Many of these factors were important predictors of the pathways and therefore could potentially explain some of the link between pathways and employment. We only present the effects on employment from some of the more significant control variables. In all cases, we present odds ratios as in the previous chapters.

Column 1 indicates that in most cases, all pathways are significantly more likely than the high school dropper pathway to lead to being employed in December 2003. For example, individuals who followed the non-gapper college, gapper-college or gapper-university pathways are over two times more likely to be employed than their counterparts who dropped out of high school and never returned. Interestingly, 2nd chancers are not more likely to be employed than those who never went back to high school; however, youth who never dropped out of high school, yet who also never received any training beyond high school (Path 3) are over 1.5 times more likely to be employed than high school droppers. Readers are reminded that a great number of 2nd chancers were enrolled in school in December 2003 and were therefore not included in this analysis. Thus, it appears that ever dropping out of high school greatly affects the employment situation when young adults are in their mid-20s.[4]

Columns 2 and 3 reveal that this same basic relationship between pathways exists even after including the opportunity-for-experience and control variables. The estimate for opportunity for experience shows that for every one month out of full-time school, the odds of being employed in December 2003 rises by 1%; that is, for every 10 months out of school, the odds rise by 10%. Thus, the effect of opportunity for experience on employment appears to be substantial. In fact, its inclusion strengthens the effect of the pathway variable. For instance, in Column 2, after controlling for time spent out of school, gappers (either college or university educated) are now over three times more likely to be employed than those who dropped out of high school. This suggests that the results shown in Column 2 may be a more accurate assessment of the impact of higher education on the employment of young adults which arises once the time elapsed since attending school full time is taken into account.

It is interesting to note as well that in terms of the likelihood of being employed, there is no difference between college graduates who delayed the start of their postsecondary studies and those who did not delay (the difference between 2.88 and 3.24 is not statistically significant). In contrast, there is a significant difference between gappers and non-gappers who obtain a university degree. Youth who took time off between high school and completing a university degree are much more likely to be employed than university graduates who went directly to university after high school, even after controlling for experience. One possible explanation for this finding is that youth who delayed have more actual job experience than youth who did not delay and so, once they leave with their degree, they are more prepared for the labour market. At the same time, we observe no significant difference between college and university employment rates specific to the pathway followed (i.e, non-gappers versus gappers). For example, the probability of employment is about the same for non-gappers regardless of whether they obtained a college diploma or a university degree, even when controlling for experience. Our finding of no difference in employment rates between college- and university- educated respondents is similar to that found using the 2000 National Graduate Survey (see Allen and Vaillancourt, 2004).

As shown in Column 3, the effect of experience is the same, indicating that the prior factors do not affect its link with employment. We present only a few control factors (sex, working during high school and age at birth of first child) in order to highlight those that were most robust. First, females are almost 20% less likely than males to be employed in December 2003. Our estimation sample does not include any students, which as we saw from Table 2.0 removes more females than males since young adult women in Canada are more likely than men at these ages to be enrolled in school. Thus, the women in our sample who are not in school are less likely than their male counterparts to be employed; this is present even after controlling for family responsibilities. In terms of family responsibilities, we see an expected effect: respondents who had their first child between age 19 and December 2003 were significantly less likely to be employed than those who had not yet had a child. Familial responsibilities often keep young adults, especially women, out of the labour market, so this is not very surprising.

Table 4.2

Logistic regression results predicting the likelihood of employment in December 2003, by education-to-labour market pathway

Education-to-labour market pathway (Reference: High school droppers)	Model 1 Pathway only	Model 2 Controlling for 'experience'	Model 3 Including all controls[1]
		odds ratio	
(2) 2nd chancers – High school or more	1.03	1.24	1.35
(3) High school graduates only	1.57***	1.67***	1.58***
(4) Non-gappers – Postsecondary leavers	1.50**	1.80***	1.69***
(5) Non-gappers – College	2.29***	2.88***	2.75***
(6) Non-gappers – University	1.57***	2.17***	2.05***
(7) Gappers/non-gappers – Trade/other	1.93***	2.41***	2.46***
(8) Gappers – Postsecondary leavers	1.10	1.38*	1.36
(9) Gappers – College	2.51***	3.24***	2.79***
(10) Gappers – University	2.80***	3.88***	3.28***
Selected control variables[1]			
Opportunity for experience: number of months between date last in school full-time and December 2003.	...	1.01***	1.01***
Female	...	...	0.84**
Average number of weekly hours worked for pay in high school (Reference: did not work)			
1 to less than 10	...	...	1.24*
10 to less than 20	...	...	1.41***
20 or more	...	...	1.65***
Age at birth of 1st biological child (Reference: no biological child)			
Less than age 19	...	...	0.87
Age 19 to less than age 21	...	...	0.63**
Age 21 or greater	...	...	0.47***
Population count[2]	762,119	760,518	680,544

... not applicable

* p<0.10, statistically significant at the 10 percent level

** p<0.05, statistically significant at the 5 percent level

*** p<0.01, statistically significant at the 1 percent level

1. Controls also included but not reported: background factors: age, ethnicity, urban status, mother tongue, limiting condition, province of high school, number of siblings, family type during high school, parental education; and intervening factors: grade-point average, age of first conjugal union, parental expectations, and mobility between province of high school and cycle 3 residence.

2. Population counts vary between models in order to maximize the available number of respondents at each step.

Note: Standard errors computed using 1000 bootstrap replicate samples.

Lastly, we find a very intriguing result for the number of hours worked for pay during high school, with a greater number of hours signalling a greater amount of early job experience. Not surprisingly, then, we find that the more hours worked for pay, the more likely youth were to be employed in December 2003 when they are between ages 22 to 24. For example, having worked 10 to 20 hours per week while in high school increases the odds by 41% of being employed at the ages of 22 to 24, while having worked 20 or more hours increases it by 65%. Recall that in Chapter 3, we found that individuals who worked a greater number of hours during high school were less likely to go on to postsecondary studies, thus harming their chances of higher education. However, the greater number of hours worked during the high school years helped these individuals in the sense that it led to a greater likelihood of employment. The issue we turn to next is job quality by examining total weekly earnings.

4.2 Total weekly earnings from all jobs

We compiled the gross weekly earnings for each job a person worked at in December 2003. Most of the sample (about 85%) only had one job, while 15% reported earnings from several jobs. As in the previous section, we first present a descriptive analysis of the earnings variable and then estimate a multivariate model. We also carried out our analysis using average hourly earnings to account for the number of jobs and found that the results were similar; as a result, we opted for the total measure in order to document the total amount of earnings available to an individual across all jobs.

4.2.1 Descriptive analysis

Table 4.3 presents employed respondents' total gross weekly earnings across all jobs worked in December 2003 at the 25th, 50th (the median) and 75th percentiles for the total sample and separately by the education-to-labour market pathways.[5] For the entire target population, the median earnings in December 2003 were just over $500 per week, while the earnings at the 25th percentile were $360 per week and almost $730 per week at the 75th percentile. Moreover, the median earnings for this population were substantially lower than the average of $668 for all labour force participants age 25 and over in December 2003 (Statistics Canada 2004). This confirms what we know about earnings for young adults, that is, that they are lower than earnings across the entire age range of individuals in the labour market.

When earnings across these percentiles are computed separately by pathway, we discover some interesting differences (keeping in mind that this does not control for experience in the labour market). Thus, all else being equal, youth who went directly to university after high school should have had less opportunity for experience in the labour market than other groups.

Focussing on the middle column, we observe that median weekly earnings range from a high of $625 for the non-gapper university pathway to a low of $450 per week for 2nd chancers. Next highest are the non-gapper college pathway at $552, while next to last lowest are gapper-PSE leavers at $460. It is noteworthy to point out that this latter group earns $20 less a week than high school dropouts. The difference between high school dropouts and PSE leavers is further accentuated when examining the earnings at the 25th percentile: high school dropouts earn on average $340 per week while gapers-PSE leavers earn $299 on average per week. Moreover, we also observe that high school droppers' median weekly earnings are greater (at $480.00) than the earnings at the 25th percentile for non-gappers with a university degree (at $385.00): this finding also applies to 2nd chancers and high school graduates only. These findings suggest that when not controlling for time spent outside education, individuals with a high school diploma who delayed going to a postsecondary program after high school graduation and who then left the postsecondary program without finishing earn less than those who never obtained a high school diploma. Whether these rankings and earnings differences persist after controlling for opportunity for experience remains to be seen. We now turn our attention to addressing this issue.

Table 4.3

Respondent's total earnings per week across all jobs in December 2003, by education-to-labour market pathway

Education-to-labour market pathway	Total earnings per week (percentile)[1]		
	25th	50th	75th
		dollars	
(1) High school droppers	340	480	672
(2) 2nd chancers – High school or more	320	450	629
(3) High school graduates only	357	500	680
(4) Non-gappers – Postsecondary leavers	317	480	680
(5) Non-gappers – College	400	552	731
(6) Non-gappers – University	385	625	838
(7) Gappers/non-gappers – Trade/other	352	539	795
(8) Gappers – Postsecondary leavers	299	460	638
(9) Gappers – College	385	550	750
(10) Gappers – University	384	540	792
Average, all pathways	360	503	729

1. Not controlling for time spent in job or time since leaving education.

Note: Population size = 602,796. (Employed population only).

4.2.2 Linear regression results of total weekly earnings

Table 4.4 reports estimated total weekly earnings equations (logarithmic) on all jobs worked in December 2003 for the employed population only. We estimate three different ordinary least squares (OLS) models with and without opportunity for experience and various other control measures (high school droppers are the reference category). Model 1, which only includes the pathway variable, suggests that four of the paths have significantly higher weekly earnings than high school droppers. The largest difference is noted for non-gapper university graduates who earn almost 18% more per week than high school dropouts, while gapper and non-gapper college graduates earn 12.5% and 13.5% more, respectively. There is also a weak effect for those who have a trade certification or other type of certificate/diploma/degree; these individuals earn almost 12% more than high school dropouts.

Interestingly, when not controlling for opportunity of experience, Wald tests reveal no significant earnings differences between non-gappers and gappers. Individuals who obtained a college diploma or university degree earn significantly more than those who started a postsecondary program and then left before completion (Paths 4 and 8). Furthermore, the negative, yet insignificant estimate, of gapper-PSE leavers mirrors what we saw in Table 4.3 when examining the relationship descriptively: gapper-PSE leavers earned less than high school droppers.

Table 4.4

Ordinary least squares regression results predicting the total weekly earnings (logged) across all jobs in December 2003, by education-to-labour market pathway

	Unstandardized coefficients		
	Model 1	Model 2	Model 3
Education-to-labour market pathway (Reference: High school droppers)	Pathway only	Controlling for 'experience'	Including all controls[1]
Constant	6.105***	5.855***	5.875***
(2) 2nd chancers – High school or more	-0.036	0.069	0.075
(3) High school graduates only	0.033	0.062	0.028
(4) Non-gappers – Postsecondary leavers	0.013	0.117*	0.070
(5) Non-gappers – College	0.135**	0.268***	0.273***
(6) Non-gappers – University	0.178***	0.372***	0.341***
(7) Gappers/non-gappers – Trade/other	0.118*	0.249***	0.205***
(8) Gappers – Postsecondary leavers	-0.066	0.062	0.012
(9) Gappers – College	0.125**	0.274***	0.215***
(10) Gappers – University	0.102	0.299***	0.230**
Selected control variables[1]			
Opportunity for experience: Number of months between date last in school full-time and December 2003	...	0.004***	0.004***
Female	...	...	-0.277***
Average number of weekly hours worked for pay in high school (Reference: did not work)			
1 to less than 10	...	...	0.062*
10 to less than 20	...	...	0.159***
20 or more	...	...	0.203***
Last province of high school (Reference: Ontario)			
Newfoundland and Labrador	...	...	-0.024
Prince Edward Island	...	...	-0.096
Nova Scotia	...	...	-0.128***
New Brunswick	...	...	-0.120***
Quebec	...	...	-0.039
Manitoba	...	...	-0.076**
Saskatchewan	...	...	0.054
Alberta	...	...	0.143***
British Columbia	...	...	-0.026
Provincial mobility between high school and Cycle 3 (Reference: same province)			
Moved to Alberta	...	...	0.108**
Moved to other province	...	...	0.116**
R-squared	0.013	0.023	0.117
Population count[2]	602,795	601,452	544,569

... not applicable

* p<0.10, statistically significant at the 10 percent level

** p<0.05, statistically significant at the 5 percent level

*** p<0.01, statistically significant at the 1 percent level

1. Controls also include but not reported: background factors: age, ethnicity, urban status, limiting condition, mother tongue, number of siblings, family type during high school, parental education; and intervening factors: grade point average, age at birth of first biological child, age of first conjugal union, and parental expectations.
2. Population counts vary between models in order to maximize the available number of respondents at each step.

Note: Standard errors computed using 1000 bootstrap replicate samples.

In Model 2, we control for opportunity for experience and discover that for every 10 months an individual spent out of full-time school prior to December 2003, weekly earnings increase by 4%. Thus, as expected, time spent outside education affects one's earnings in a positive manner, regardless of pathway followed. In terms of the impact of pathways after controlling for experience, we see that some effects have strengthened (similar to what we saw in Table 4.2 when analyzing the likelihood of employment). For example, non-gapper university graduates now earn over 37% more than high school dropouts (an increase of around 19 percentage points from Model 1), while individuals who followed non-gapper and gapper-college pathways or the gapper-university pathway earn around 27% to 30% more than high school droppers. Thus, when considering 'experience,' those who obtain a postsecondary diploma or degree do considerably better than high school droppers.

Wald tests reveal that individuals with a postsecondary diploma or degree also earn significantly more than 2nd chancers, the high school only group, and individuals who left a postsecondary program prior to finishing. It is interesting to note again that the weekly earnings of postsecondary leavers are not statistically different from those of high school dropouts, 2nd chancers and individuals who only have a high school diploma. Thus, we observe a strong 'credentializing' effect, since time spent in a postsecondary program without seeing it through to completion does not lead to better earnings. Furthermore, postsecondary leavers may be in a difficult financial situation because, on the one hand, they may have increased debt associated with their postsecondary experience, while on the other hand, they may have increased opportunity costs associated with not being employed during the time when enrolled. We do not examine these aspects of their financial situation, however, and leave this for future research.

In Model 3 when all background and intervening factors are controlled for, we find that educational pathway and opportunity for experience have about the same effect as in Model 2. We present results from several control factors in order to highlight the most salient: included are sex, paid work during high school, province of high school and mobility between high school and Cycle 3.

In terms of sex, we find the all-too-familiar effect of lower earnings for women: young adult females who are working and not in school in December 2003 earn almost 28% less than their male counterparts.[6] Whether this effect will remain for this cohort of young Canadian women who are becoming, on average, more educated than men remains to be seen; assessing labour market status at age 22 to 24 does not yet pick up the effects of the greater educational credentials for women. In a recent study, Frenette and Coulombe (2007) found that education was the driving force behind the reduction in the gender wage gap in the 1990s among 25 to 29 year-olds; this could conceivably have even more impact in the future since the trend of higher educational attainment for Canadian women does not appear to be subsiding.

Working in high school has a positive effect on earnings for youth age 22 to 24. Working an average of 10 to 20 hours a week in high school increases earnings by almost 16%, while working more than 20 hours increases earnings 20% more than for those respondents who never worked in high school. We also observe that more work experience in high school also led to a greater likelihood of being employed. Recall, however, that working a great number of hours during high school had a detrimental effect on educational attainment; conversely, these results suggest

that the greater number of hours worked during the high school years helped these individuals earn more than their counterparts who had not worked in high school.

We also find that earnings vary depending on where an individual went to high school; for most 22 to 24 year-olds, this is their province of high school graduation, while for others, it is the province they were last in when they dropped out of high school. We use Ontario as the reference category. For the most part, we find that youth in the Atlantic Provinces earn significantly less than youth in Ontario; this is especially the case for young adults in New Brunswick and Nova Scotia who earn about 12% to 13% less per week on average. Moreover, youth who went to high school in Manitoba also earn 8% less than youth who went to high school in Ontario. The only high school province where young adults seem to earn significantly more than in Ontario is Alberta, where earnings were about 14% more per week in December 2003 than for their working counterparts who went to high school in Ontario. Interestingly, Wald tests reveal that all youth who went to high school in the Atlantic Provinces, Quebec, Manitoba, British Columbia, and Ontario earn significantly less than youth who went to high school in Alberta. The only exception is Saskatchewan: young adults who went to high school in that prairie province do not earn less than their provincial neighbours to the west. Moreover, young adults who went to high school in Saskatchewan earn more than their counterparts from Nova Scotia, New Brunswick and Manitoba.

While the effects on earnings of the province of high school are interesting, we know that not all young adults remain in the province where they went to high school; many move to attend postsecondary institutions or to look for work. Our indicator of mobility after leaving high school suggests that young adults who move from their province of high school earn significantly more than those who remain in the same province up to Cycle 3. For example, moving to Alberta increases weekly earnings by almost 11%, while moving to any other province increases earnings by almost 12%. This finding generally ties in with what we know about a mobile work force and its effects on wages; in a free-market economy, people have the option of moving to where they can find the best (usually highest-paying) job. However, given the economic boom in Alberta, we may have expected to find higher earnings for those who move to Alberta versus those who move to other provinces. One possibility for our current finding is that the economic boom in Alberta attracts workers at all levels of pay and our current measure includes all mobile young adults, regardless of occupation. Thus, the high pay of some jobs and the low pay of others may essentially cancel each other out when analyzed in this way.

4.3 Occupation

This survey contains a derived variable for respondent's occupation for all jobs worked in December 2003 based on the 2-digit 1991 Standard Occupational Classification (SOC). There were originally eleven categories which were collapsed into four for ease of presentation and in order to have a large enough sample size. We removed individuals who worked in unclassified occupations (representing 1,416 individuals in the population). Our remaining categories are (1) *Management, business-related* made up of management and business, and finance and administrative occupations; (2) *Professional, scientific, education, government* comprised of natural/applied sciences and related occupations, health, social science, education, government service, and religion, as well as art, culture, recreation and

sport; (3) *Sales and service* (did not contain any subcategories); and (4) *Goods-producing and primary industry*, which includes trades, equipment operators, primary industry, processing, manufacturing and utilities. Primary-industry occupations include those related to agriculture, mining, forestry, fishing, oil and gas exploration and primary production labourers.

Lastly, since we do not identify a 'main' job in December 2003, the occupational groups include any occupation in which the respondent may have worked during this month. Thus, if they had more than one job in two different occupational groups, they would be present in each of those groups; in other words, these occupations are not mutually exclusive for any one individual.

Table 4.5 presents the proportion of respondents in each type of occupation in December 2003. In aggregate, we observe that the most common occupations are sales and service, at 34.5%, while only 20.8% worked in a management or business-related job. Across pathways, we find that occupations are not distributed evenly. For instance, non-gappers (college and university graduates only) and gappers (university graduates and leavers) are more represented among management and business-related occupations when compared to the total, while high school droppers are less represented among this occupational group. A similar pattern is noted for professional, scientific, education and government occupations, which also includes gappers with a college diploma; 2nd chancers, high school graduates only and postsecondary leavers (non-gapper and gapper) are less represented. Sales and service occupations, which tend to be some of the lowest paying, show that postsecondary leavers (both gappers and non-gappers) as well as those who have a trade certification or other type of certificate/diploma/degree (such as private business schools and certificates from professional associations) are overrepresented. This latter finding is likely driven by the other type of certificate/diploma/degree and not by those with a trade certification. Our results are similar to those regarding access to skilled jobs as reported by de Broucker (2005c).

Lastly, we find that for the goods-producing occupations and those in primary industry, individuals without any postsecondary training (high school dropouts, 2nd chancers and those with a high school diploma only) are considerably overrepresented. For example, high school dropouts make up about 12% of the entire sample, yet encompass almost 24% of those in this sector. At the other extreme, around 2% of individuals who followed the non-gapper or gapper-university degree path work in a goods-producing or a primary-industry job.

This analysis does not delve into fine enough detail to discuss specifics related to the question of training matching employment. However, the fact that so few university graduates work in the goods- producing and primary-industry sector suggests that education level is linked with a complementary occupation for 22 to 24 year-olds who were employed in December 2003; further analysis is needed to fully explore this question.

4.4 Job satisfaction

We now turn our attention from the more objective aspects of the labour market to give attention to an individual's assessment of their level of job satisfaction. Past research on job satisfaction has found mixed results on the link between education and job satisfaction. For example, Krahn and Lowe (1998) suggest that there is

very little variation in job satisfaction across educational categories. This is confirmed in earlier U.S. research by Kopka (1990) who found that job satisfaction of high school graduates and dropouts was comparable to that of postsecondary graduates. However, recent research by Andres and Grayson (2003) suggests that job satisfaction is greatest at the highest levels of education.

In the current descriptive analysis, we attempt to further our understanding of the link between choice of educational pathway and eventual job satisfaction. Johnson and Elder (2002) suggest that the importance that youth place on certain aspects of work (including job security, rewards and influence) is apparent even in high school. Due to data limitations, we cannot link the value that high school students place on intrinsic versus extrinsic rewards to choice of educational pathway in this dataset; however, by highlighting which pathways lead to higher levels of job satisfaction, we are able to illuminate at least part of the puzzle among young adults.

Table 4.5

Respondent's occupational category, worked at any job in December 2003, by education-to-labour market pathway[1]

Education-to-labour market pathway	Management and business related[2]	Professional scientific, education, government[3]	Sales and service[4]	Goods producing and primary industry[5]	All occupational groups
			percent		
(1) High school droppers	6.9	3.1	11.3	23.8	12.0
(2) 2nd chancers – High school or more	9.0	5.6	10.6	11.7	9.5
(3) High school graduates only	17.3	6.2	18.4	26.6	18.0
(4) Non-gappers – Postsecondary leavers	7.7	5.2	8.9	6.5	7.3
(5) Non-gappers – College	15.4	21.3	12.9	8.1	13.7
(6) Non-gappers – University	14.3	24.4	8.3	2.0	11.1
(7) Gappers/nongappers – Trade/other	5.0	4.8	5.1	4.5	4.8
(8) Gappers – Postsecondary leavers	7.6	4.8	8.5	6.2	6.9
(9) Gappers – College	11.6	15.7	11.8	9.0	11.9
(10) Gappers – University	5.4	9.1	4.3	1.6	4.7
Total	100.0	100.0	100.0	100.0	100.0
Population size	125,104	148,551	207,634	171,148	602,795
Percent for entire population[6]	20.8	24.6	34.5	28.4	100.0

1. Not controlling for time spent in job or time since leaving education.
2. Includes management and business, finance and administrative
3. Includes natural/applied sciences, related health, social science, education, government, religion, art, culture, recreation and sport
4. Includes sales and service occupations
5. Includes trades, transport, equipment operators, primary industry, processing, manufacturing and utilities
6. Some overlap occurs in these occupations since an individual may have held more than one job in December 2003; thus these row percentages total more than 100.

Note: Percentages in table may not add to 100 due to rounding.

We again concentrate on jobs worked in December 2003 and focus on two separate measures of job satisfaction: (1) highest level of job satisfaction on all aspects of the job and (2) highest level of job satisfaction related to money earned. The response categories for both these measures are 'very dissatisfied,' 'dissatisfied,' 'satisfied' and 'very satisfied;' due to small sample size, we collapse 'very dissatisfied' and 'dissatisfied' into one category. These measures are compiled for all jobs worked in December 2003 and since we do not identify a 'main' job, this measure identifies the highest level given across all jobs. For example, if the respondent stated in one

job that they were 'dissatisfied', while on another they said they were 'satisfied,' the individual was given a value of 'satisfied' on this variable. We may be overestimating satisfaction with this method; however, this technique helps identify those who are extremely dissatisfied with their job(s) in December 2003. In other words, if an individual works three jobs and their highest level of satisfaction is 'dissatisfied' then we can be quite confident that we are tapping into extreme dissatisfaction with work.

Tables 4.6 and 4.7 present the descriptive results of satisfaction on all aspects of jobs and in relation to money earned, respectively. Table 4.6 shows that the vast majority (89.4%) of the sample are satisfied with all aspects of their jobs in December 2003, while only 10.6% said they were dissatisfied (incidentally, of these only 2.5% were very dissatisfied). Due to our measurement of this indicator, satisfaction with jobs may be slightly overstated; nonetheless, what this shows on aggregate is that employed respondents are overall quite satisfied with the jobs they are working in December 2003. Not all pathways have the same level of satisfaction, however. For example, 10.6% of the entire sample were dissatisfied with their jobs, yet the same figure is 16.1% for 2nd chancers. Meanwhile, 2nd chancers (almost 62%) and those with trade/other diploma (60.2%) also have a higher proportion of satisfied than the entire sample (56.5%). Conversely, those very satisfied appear to more concentrated within both non-gapper pathways as well as the gapper-college pathway. While there does appear to be some difference of job satisfaction across pathways, the differences are not great (except for between 2nd chancers and college graduates, with a gap of 16 percentage points). This lack of a great deal of variability across educational pathway categories is similar to past work (see Krahn and Lowe 1998; Kopka 1990).

Turning to satisfaction related to earnings, Table 4.7 shows that in the entire sample, 78% are satisfied with their earnings in December 2003, while 22% are dissatisfied (of these 4.3% are 'very dissatisfied'). Interestingly, across the entire sample, satisfaction related to earnings is less than we observed in Table 4.6 with regard to all aspects of the job. This suggests that there are other facets of jobs, besides earnings, that individuals factor in when assessing their overall level of job satisfaction. This is consistent with findings by Lowe and Schellenberg (2001) and Krahn (1992). Specifically, Krahn found that 56% of Canadians were very satisfied with their jobs, yet only 34% were very satisfied with their level of pay. While the current pattern is the same, the proportion very satisfied is less than that reported by Krahn (1992) because of sample differences. Young workers typically report lower levels of satisfaction than older workers. Moreover, the pattern across pathways is very similar to that observed with regard to all aspects of the job: 2nd chancers and high school dropouts are overly represented among the most dissatisfied with their earnings, while those who graduated with postsecondary credentials are more satisfied. A further group that appears to be relatively dissatisfied with their level of earnings are non-gapper PSE leavers; about 27% of this group are dissatisfied with their earnings in December 2003.

Table 4.6

Respondent's highest level of job satisfaction with respect all aspects of any job heldin December 2003, by education-to-labour market pathway[1]

Education-to-labour market pathway	Very dissatisfied/ dissatisfied	Satisfied	Very satisfied	Total
		percent		
(1) High school droppers	10.1[E]	57.9	32.1	100.0
(2) 2nd chancers – High school or more	16.1	61.8	22.0	100.0
(3) High school graduates only	11.4	57.7	30.9	100.0
(4) Non-gappers – Postsecondary leavers	13.6	54.5	31.9	100.0
(5) Non-gappers – College	7.3[E]	54.1	38.6	100.0
(6) Non-gappers – University	7.9[E]	54.5	37.5	100.0
(7) Gappers/non-gappers – Trade/other	13.5[E]	60.2	26.4	100.0
(8) Gappers – Postsecondary leavers	10.6	56.5	32.9	100.0
(9) Gappers – College	8.7	53.1	38.2	100.0
(10) Gappers – University	10.5[E]	58.0	31.5	100.0
Average, all pathways	10.6	56.5	32.9	100.0

E use with caution

1. Not controlling for time spent in job or time since leaving education.

Note: Percentages in table may not add to 100 due to rounding.

Table 4.7

Respondent's highest level of job satisfaction with respect to money earned in any job held in December 2003, by education-to-labour market pathway[1]

Education-to-labour market pathway	Very dissatisfied/ dissatisfied	Satisfied	Very satisfied	Total
		percent		
(1) High school droppers	20.9	56.0	23.1	100.0
(2) 2nd chancers – High school or more	28.0	55.0	17.0	100.0
(3) High school graduates only	21.5	57.3	21.2	100.0
(4) Non-gappers – Postsecondary leavers	27.1	49.4	23.6	100.0
(5) Non-gappers – College	20.9	54.9	24.2	100.0
(6) Non-gappers – University	18.0	55.8	26.2	100.0
(7) Gappers/non-gappers – Trade/other	29.1	52.6	18.3	100.0
(8) Gappers – Postsecondary leavers	20.5	57.4	22.1	100.0
(9) Gappers – College	20.6	55.2	24.2	100.0
(10) Gappers – University	17.4	61.2	21.4	100.0
Average, all pathways	22.0	55.5	22.5	100.0

1. Not controlling for time spent in job or time since leaving education.

Note: Percentages in table may not add to 100 due to rounding.

4.5 Summary

In this final substantive chapter, our attention shifted from describing and predicting the important factors associated with pathway selection to analysis of the labour market outcomes of these pathways. We assessed the employment situation of all jobs in December 2003, restricted to only those youth who were not in school in that month.

- Almost 80% of the sample not in school in December 2003 are employed; yet gappers who either graduated from college or university and non-gappers with college diplomas are more often employed, while high school droppers, 2nd chancers, and gapper-PSE leavers are more often not employed. These effects remain in multivariate models and are accentuated when controlling for opportunity for experience. For example, gappers with either a college diploma or university degree are much more likely to be employed than high school droppers, 2nd chancers, and individuals who only have a high school diploma.
- The odds of employment are also increased with a greater number of months spent out of full-time school for males, for individuals who did not have a birth by Cycle 3, and for individuals who worked more hours in high school.
- The median weekly earnings across all jobs worked in December 2003 are $503. On average, postsecondary graduates (gappers and non-gappers) earned more than the median. High school droppers, 2nd chancers, and all PSE leavers earned less than the median. However, some university graduates earned less than high school dropouts, though this is at least partly attributable to the university grads having had less opportunity for work experience.
- Multivariate earnings equations revealed that non-gapper university graduates and college graduates (regardless of gap) earn significantly more than high school droppers, 2nd chancers and those with a high school diploma only. At the same time, postsecondary graduates earn considerably more than PSE leavers. However, gappers do not earn more than non-gappers, suggesting that taking time off between high school and a postsecondary program does not translate into greater earnings between ages 22 and 24. Nonetheless, regardless of pathway followed, a greater number of months subsequent to being in school full time raises earnings significantly.
- In addition to the effects of school pathway, several additional interesting results were found for other indicators. For example, women have lower earnings than men, earning almost 28% less than their working male counterparts. Meanwhile, working a greater number of hours in high school has a positive effect on earnings: working on average more than 20 hours per week increases earnings by about 20% as compared to not working at all. However, it adversely affects educational attainment.
- Also when controlling on pathway, we found that youth who went to high school in Nova Scotia, New Brunswick and Manitoba earn significantly less in December 2003 than youth who went to high school in Ontario. Meanwhile, youth who went to high school in Alberta earn significantly more per week than those who went to high school in the Atlantic provinces, Quebec, Manitoba, British Columbia, and Ontario; Saskatchewan is the only province that is comparable to Alberta.

- Young adults who move province after high school witness their earnings increase compared to youth who remain in the same province. Specifically, earnings increase by 11% for youth who move to Alberta and by 12% for those who move to a province other than Alberta.
- The most common occupations are in sales and service, while the least common are in management or business related. Young adults with postsecondary degrees or diplomas are more represented among management and business-related jobs, as well as professional, scientific, education and government jobs. Meanwhile, young adults with a high school diploma or less are more represented among the goods-producing or primary sector industries and PSE leavers are more represented among the lowest-paying sales and service occupations, likely leading to their low earnings observed earlier.
- In aggregate, employed 20 to 24 year-olds are overall quite satisfied with their jobs in December 2003: almost 90% of the sample are quite satisfied with all aspects of their jobs, while 10% were dissatisfied, with only 2.5% 'very' dissatisfied. Second chancers are the most over-represented among the very dissatisfied group, while college graduates appear to be the most satisfied with all aspects of their jobs. On the whole, a lower proportion of young adults are satisfied with their earnings than with regard to all aspects of their jobs suggesting that other factors besides earnings also affect level of job satisfaction. Non-gapper PSE leavers are one of the most over-represented groups that are very dissatisfied with earnings across all jobs in December 2003.

5. Conclusion

In this study, we have compiled a vast amount of information on the intricacies related to the education-to-labour market pathways of young Canadian adults age 22 to 24 in December 2003. Given the relatively young age of this population, we cannot predict with certainty how education-to-labour market pathways may relate to young adults as they approach age 30 and beyond; this is left for later work.

Key findings of our research include the following:

- 34% of respondents were still in school in December 2003. Among students, the highest level of education taken across all programs and institutions was 22% in college, 72% in university, 3% in trade or other certificate or diploma programs and 3% had no postsecondary training.
- Almost 9% of the sample had dropped out of high school and had never returned prior to our measurement of labour force status in December 2003; about 10% had started a postsecondary program but had left the education system by this date without completing their program. These are both very vulnerable groups.
- Almost 7% of the sample received a '2nd chance' since they had returned to school and obtained their high school diploma after having dropped out.
- High school droppers and PSE leavers were the most susceptible to not being employed and to having low earnings in December 2003; in fact PSE leavers earned less than those who had dropped out of high school, but that may be explained by the longer duration of labour market experience of the latter group, an advantage that one might expect to dissipate over time. Second chancers had similar earnings to high school dropouts.
- Individuals who followed the pathways that resulted in a postsecondary degree or diploma, either directly or indirectly after high school, benefited the most in their jobs in December 2003. These trends are observed in levels of job satisfaction as well; the most dissatisfied with their jobs are those who had a high school diploma or less and those who left a postsecondary program without completion.
- Not all groups pass through education-to-labour market pathways in equal proportions. Females are less represented among high school dropouts and are more represented among postsecondary graduates. However, for young women no longer in the education system in December 2003, their higher level of education does not translate into a greater likelihood of employment or earnings, as compared to males.
- Different systems of curricula, structure and governance across provinces may lead to postsecondary choices occurring at different ages and as a result, progression through pathways may vary across provinces. We found that youth who went to high school in Quebec and Alberta were more likely than youth from Ontario to follow a high school dropper path to the labour market. However, if Quebec teens did graduate from

high school and go on to a postsecondary program they were more likely to do so directly within four months (likely as a result of the Quebec CEGEP system).

- Provincial differences exist for labour market outcome as well. In general, youth who went to high school in Alberta enjoy a greater likelihood of being employed as well as having higher earnings than their counterparts in all provinces, with the exception of Saskatchewan where no significant differences with Alberta were noted.
- Several factors during the high school years were found to be important; most notable were working in high school, parental expectations and added familial responsibilities as a result of a birth. For instance, working over 20 hours per week during high school led to a lower likelihood of choosing a pathway culminating in a postsecondary degree or diploma. However, individuals who worked more than 20 hours per week in high school were better situated in the labour market in December 2003 in the sense that they were not only more likely to be employed, but they also had higher weekly earnings than youth who had not worked in high school. In terms of parental influence, we observed that parental expectations regarding their child's education are high and higher expectations are associated with higher educational attainment; especially for youth who do not delay their participation in a postsecondary program following high school graduation. At the same time, becoming a parent prior to age 19 led to a much greater risk of following the high school dropper and 2nd chancer pathways and to a much lower chance of attending a postsecondary program. Having a child during the transition from education to the labour market (between ages 19 to 22) also led to a significantly greater risk of not being employed.

A major contribution of this research is to document important factors affecting education-to-labour market pathways, as well as determining the labour market 'success' of these pathways on a nationally representative sample of young Canadian adults. More research is needed to explore some of the current findings. Additional longitudinal data collected for this cohort is needed in order to track their subsequent experiences as they continue to pass through the transition to full adulthood. Only then can we have a longer time period over which to assess their overall success in transitioning into the labour market.

Appendix

Chapter 1: Descriptive statistics

Table A.1.1

Weighted population count and proportion of YITS respondents who follow particular school-to-labour market pathways

Education-to-labour market pathway	Population count	Percent
Nonstudents		
(1) High school droppers	101,428	8.8
(2) 2nd chancers – High school or more	79,421	6.9
(3) High school grads only	136,187	11.9
(4) Non-gappers – Postsecondary leavers	56,048	4.9
(5) Non-gappers – College	97,068	8.4
(6) Non-gappers – University	84,190	7.3
(7) Gappers-Non-gappers – Trade-Other	35,260	3.1
(8) Gappers – Postsecondary leavers	57,041	5.0
(9) Gappers – College	83,295	7.3
(10) Gappers – University	32,175	2.8
Students		
(X) Ever dropped out of high school	32,344	3.0
(Y) High school grad (never dropped out), non-gappers	198,770	17.3
(Z) High school grad (never dropped out), gappers	152,188	13.3
Total	1,145,415	100.0

Chapter 2: Full multinomial logit results

Table A.2.1

Multinomial logistic regression results predicting the likelihood of following school-to-labour market pathways: Background demographic characteristics

	(1)				(2)			(3)		(4)
	High school droppers (reference)				2nd chancers (reference)			High school only (reference)		Non-gappers (reference)
Background variable	2nd chancers	High school only	Non-gappers	Gappers	High school only	Non-gappers	Gappers	Non-gappers	Gappers	Gappers
	odds ratio				odds ratio			odds ratio		odds ratio
Female (Reference: male)	1.79***	1.30*	2.72***	2.14***	0.73**	1.52***	1.19	2.09***	1.64***	0.79***
Age in cycle 1 (Reference: age 20)										
Age 18	0.94	1.37*	0.62***	0.57***	1.45**	0.66***	0.61***	0.45***	0.42***	0.93
Age 19	0.97	1.15	0.83	0.85	1.18	0.85	0.88	0.72***	0.74**	1.03
Visible minority (Reference: not)	1.22	1.24	1.51	1.08	1.01	1.23	0.88	1.22	0.88	0.72
Canadian born (Reference: not)	0.99	1.57	1.49	1.08	1.58	1.49	1.09	0.95	0.69	0.73
Aboriginal (Reference: not)	1.53	0.71	0.34***	0.62	0.46***	0.22***	0.41**	0.48***	0.88	1.81*
Urban residence in cycle 1 (Reference: rural)	1.52***	1.30*	1.35**	1.39**	0.85	0.89	0.92	1.04	1.07	1.03
Presence of long-term limiting condition, cycle 1 (Reference: no)	1.15	0.62**	0.30***	0.46***	0.54**	0.26***	0.40***	0.48***	0.75	1.55**

* p<0.10, statistically significant at the 10 percent level
** p<0.05, statistically significant at the 5 percent level
*** p<0.01, statistically significant at the 1 percent level

Notes: Controls include the linguistic and high school province factors from Table 2.5 and the family factors from Table 2.6.

'High school droppers': dropped out of high school and never went back to school or received any type of postsecondary training.

'2nd chancers': had ever dropped out of high school but returned to attain at least their high school diploma.

'High school only': never dropped out of high school and never went to any type of postsecondary program after high school graduation.

'Non-gappers': never dropped out of high school and went directly (less than or equal to 4 months) to a postsecondary program after high school graduation.

'Gappers': never dropped out of high school and did not go directly (greater than 4 months) to a postsecondary program after high school graduation.

Population size = 706,302.

Standard errors computed using 1000 bootstrap replicate samples.

The overall multinomial model is significant at the .01 level.

Table A.2.2

Multinomial logistic regression results predicting the likelihood of following school-to-labour market pathways: Background linguistic and province of high school characteristics

	(1)				(2)			(3)		(4)
	High school droppers (reference)				2nd chancers (reference)			High school only (reference)		Non-gappers (reference)
Background variable	2nd chancers	High school only	Non-gappers	Gappers	High school only	Non-gappers	Gappers	Non-gappers	Gappers	Gappers
	odds ratio				odds ratio			odds ratio		odds ratio
Mother tongue (Reference: English)										
French	1.35	1.11	1.32	1.10	0.82	0.98	0.81	1.19	0.99	0.83
Other	0.85	0.46**	0.79	0.55*	0.55	0.94	0.65	1.72*	1.20	0.70
Last province of high school (Reference: Ontario)										
Newfoundland and Labrador	1.14	1.29	2.15**	1.27	1.14	1.89*	1.12	1.67**	0.99	0.59***
Prince Edward Island	0.31	0.77	0.85	0.29*	2.50**	2.77**	0.95	1.11	0.38***	0.34***
Nova Scotia	0.74	0.87	1.99***	0.60**	1.18	2.70***	0.82	2.29***	0.69	0.30***
New Brunswick	0.45**	1.41	1.58*	0.70	3.12***	3.51***	1.55	1.13	0.50***	0.44***
Quebec	0.48***	0.26***	0.73	0.20***	0.53***	1.51*	0.41***	2.82***	0.78	0.28***
Manitoba	0.77	0.76	0.77	0.47***	0.98	0.99	0.61*	1.01	0.62**	0.62***
Saskatchewan	1.11	1.75**	2.17***	0.93	1.57*	1.95***	0.84	1.24	0.53***	0.43***
Alberta	0.55**	0.96	0.48***	0.44***	1.75**	0.87	0.82	0.50***	0.47***	0.93
British Columbia	0.51**	0.84	0.65	0.43***	1.65*	1.27	0.85	0.77	0.52***	0.67**

* p<0.10, statistically significant at the 10 percent level

** p<0.05, statistically significant at the 5 percent level

*** p<0.01, statistically significant at the 1 percent level

Notes: Controls include the basic demographic factors from Table 2.4 and the family factors from Table 2.6.

'High school droppers': dropped out of high school and never went back to school or received any type of postsecondary training.

'2nd chancers': had ever dropped out of high school but returned to attain at least their high school diploma.

'High school only': never dropped out of high school and never went to any type of postsecondary program after high school graduation.

'Non-gappers': never dropped out of high school and went directly (less than or equal to 4 months) to a postsecondary program after high school graduation.

'Gappers': never dropped out of high school and did not go directly (greater than 4 months) to a postsecondary program after high school graduation.

Population size = 706,302.

Standard errors computed using 1000 bootstrap replicate samples.

The overall multinomial model is significant at the .01 level.

Table A.2.3

Multinomial logistic regression results predicting the likelihood of following school-to-labour market pathways: Background family characteristics

	(1)				(2)			(3)		(4)
	High school droppers (reference)				2nd chancers (reference)			High school only (reference)		Non-gappers (reference)
Background variable	2nd chancers	High school only	Non-gappers	Gappers	High school only	Non-gappers	Gappers	Non-gappers	Gappers	Gappers
	odds ratio				odds ratio			odds ratio		odds ratio
Number of siblings										
(0 to 3 or more)	0.84*	0.96	0.80***	0.85**	1.15	0.95	1.01	0.83***	0.88**	1.06
Family type in high school (Reference: intact)										
Step-parent family	0.91	0.57**	0.33***	0.61*	0.63*	0.37***	0.67	0.58***	1.07	1.84***
Lone parent family	1.19	0.57***	0.40***	0.45***	0.48***	0.34***	0.38***	0.71**	0.79	1.12
Other family type	2.58**	0.93	0.68	0.73	0.36***	0.26***	0.28***	0.73	0.79	1.08
Parental education (Reference: less than high school)										
High school	1.21	1.69***	1.80***	1.59**	1.39	1.48*	1.31	1.07	0.94	0.89
Some postsecondary	1.66	2.35***	4.20***	3.76***	1.42	2.53***	2.27***	1.79***	1.60**	0.90
Postsecondary graduate	1.90***	1.71**	6.18***	4.27***	0.90	3.26***	2.25***	3.62***	2.50***	0.69**

* p<0.10, statistically significant at the 10 percent level

** p<0.05, statistically significant at the 5 percent level

*** p<0.01, statistically significant at the 1 percent level

Notes: Controls include the basic demographic factors from Table 2.4 and the linguistic and high school province factors from Table 2.5.

'High school droppers': dropped out of high school and never went back to school or received any type of postsecondary training.

'2nd chancers': had ever dropped out of high school but returned to attain at least their high school diploma.

'High school only': never dropped out of high school and never went to any type of postsecondary program after high school graduation.

'Non-gappers': never dropped out of high school and went directly (less than or equal to 4 months) to a postsecondary program after high school graduation.

'Gappers': never dropped out of high school and did not go directly (greater than 4 months) to a postsecondary program after high school graduation.

Population size = 706,302.

Standard errors computed using 1000 bootstrap replicate samples.

The overall multinomial model is significant at the .01 level.

Chapter 3: Full multinomial logit results

Table A.3.1

Multinomial logistic regression results predicting the likelihood of following school-to-labour market pathways: intervening characteristics

	(1)				(2)			(3)		(4)
	High school droppers (reference)				2nd chancers (reference)			High school only (reference)		Non-gappers (reference)
Background variable	2nd chancers	High school only	Non-gappers	Gappers	High school only	Non-gappers	Gappers	Non-gappers	Gappers	Gappers
	odds ratio				odds ratio			odds ratio		odds ratio
Grade-point average in last year of high school (Reference: 70 to 79)										
80 to 100	0.91	0.89	2.69***	1.62**	0.98	2.96***	1.78***	3.01***	1.81***	0.60***
60 to 69	0.79	0.57***	0.20***	0.33***	0.72*	0.26***	0.41***	0.36***	0.58***	1.61***
Less than 60	0.42***	0.11***	0.02***	0.03***	0.27***	0.04***	0.07***	0.16***	0.25***	1.55
Average number of weekly hours worked for pay in high school (Reference: did not work)										
1 to less than 10	1.14	1.03	1.24	1.32	0.91	1.09	1.15	1.20	1.27	1.06
10 to less than 20	1.21	1.35	1.29	1.45*	1.11	1.06	1.19	0.96	1.08	1.12
20 or more	1.03	0.79	0.56***	0.74*	0.77	0.54***	0.71*	0.70**	0.93	1.32**
Age at birth of 1st biological child (Reference: no biological child)										
Less than age 19	0.87	0.22***	0.05***	0.05***	0.25***	0.05***	0.06***	0.21***	0.24***	1.16
Age 19 to less than age 21	0.73	0.46***	0.14***	0.20***	0.63	0.19***	0.27***	0.29***	0.43***	1.45
Age 21 or greater	0.82	0.91	0.56**	0.59*	1.10	0.68	0.71	0.62**	0.65**	1.04
Had 1st conjugal union prior to age 19 (Reference: did not)	0.95	0.75	0.51**	0.57**	0.79	0.54**	0.60*	0.68*	0.76	1.11
Importance to parents that child obtains more than (Reference: fairly)										
Not at all	0.65	0.51**	0.09***	0.22***	0.79	0.14***	0.33***	0.18***	0.42***	2.35**
Slightly	0.73	0.86	0.44***	0.45***	1.18	0.61**	0.62**	0.51***	0.53***	1.03
Very	1.37	1.18	3.66**	2.19***	0.86	2.67***	1.60***	3.11***	1.86***	0.60***
Provincial mobility between high school and cycle 3 (Reference: same province)										
Moved to Alberta	0.70	0.97	0.92	0.77	1.38	1.31	1.09	0.95	0.79	0.83
Moved to other province	1.08	0.91	1.04	0.88	0.84	0.96	0.82	1.14	0.97	0.85

* p<0.10, statistically significant at the 10 percent level

** p<0.05, statistically significant at the 5 percent level

*** p<0.01, statistically significant at the 1 percent level

Notes: Includes controls for sex, age, ethnicity, urban status, limiting condition, mother tongue, province of high school, number of siblings, family type during high school, and parental education.

'High school droppers': dropped out of high school and never went back to school or received any type of postsecondary training.

'2nd chancers': had ever dropped out of high school but returned to attain at least their high school diploma.

'High school only': never dropped out of high school and never went to any type of postsecondary program after high school graduation.

'Non-gappers': never dropped out of high school and went directly (less than or equal to 4 months) to a postsecondary program after high school graduation.

'Gappers': never dropped out of high school and did not go directly (greater than 4 months) to a postsecondary program after high school graduation.

Population size = 706,302.

Standard errors computed using 1000 bootstrap replicate samples.

The overall multinomial model is significant at the .01 level.

Chapter 4: Hourly weekly earnings (percentile)

Table A.4.1

Respondent's average hourly earnings across all jobs in December 2003, by education-to-labour market pathway

Education-to-labour market pathway	Average hourly earnings (Percentile)[1]		
	25th	50th	75th
	dollars		
(1) High school droppers	9.00	11.50	15.50
(2) 2nd chancers – High school or more	9.00	11.50	14.50
(3) High school graduates only	9.38	12.00	15.63
(4) Non-gappers – Postsecondary leavers	8.94	12.00	15.63
(5) Non-gappers – College	10.39	14.00	18.11
(6) Non-gappers – University	11.00	15.83	21.00
(7) Gappers/non-gappers – Trade/other	9.50	13.60	18.57
(8) Gappers – Postsecondary leavers	9.38	12.00	15.00
(9) Gappers – College	10.00	13.80	18.00
(10) Gappers – University	10.07	14.68	18.75
Average, all pathways	9.25	12.07	16.67

1. Not controlling for time spent in job or time since leaving education.

Note: Population size = 706,302.

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Endnotes

1. Ontario had an extra year of high school (grade 13) until 2002-2003. The 22 to 24 year-olds in this sample would have moved through the school system in Ontario when grade 13 existed. Therefore, many students in Ontario would have started their postsecondary education at age 19 rather than age 18 as in other provinces (excluding Quebec). Consequently, this will impact upon their education status at age 22 to 24. The distinctiveness of the Quebec CEGEP system was discussed previously.
2. In all descriptive analyses, we present coefficients of variation (CVs) which provide a measure of the reliability of the estimate, taking account of sampling variability. Specifically, the CV is a measure of dispersion calculated by dividing the standard error of an estimate by the estimate, which in our case is a sample proportion. CVs of 16.5% or less are considered to be of good quality, those between 16.6% and 25% are less reliable, and those between 25 and 33.3% are even less reliable, while proportions with a CV greater than 33.3% are too unreliable to be published.
3. Results from this additional regression analysis are available upon request.
4. Further evidence of this is in Wald tests (*Wald tests are routine statistical tests used to determine if two parameters are significantly different from each other*), which reveal that the likelihood of employment for 2nd Chancers is also significantly different from the other pathways (except for Path 8: Gapper-PSE Leavers).
5. In addition to the analysis discussed in this report, we also include an extra table of results in the Appendix, which uses average hourly earnings in December 2003 in place of total weekly earnings.
6. While we do not explore the underlying reasons for this in depth, we did descriptively analyze (results not shown) occupation by gender and discovered that women in this sample are disproportionately in the lowest paying sales and service sector occupations. This may partially explain some of the gender gap in earnings between men and women in this sample.

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The **Tourism Statistics Program** provides information on domestic and international tourism. The program covers the Canadian Travel Survey and the International Travel Survey. Together, these surveys shed light on the volume and characteristics of trips and travellers to, from and within Canada.

The **Centre for Education Statistics** develops and delivers a comprehensive program of pan-Canadian education statistics and analysis in order to support policy decisions and program management, and to ensure that accurate and relevant information concerning education is available to the Canadian public and to other educational stakeholders. The Centre conducts fifteen institutional and over ten household education surveys. Analysis is also published in *Education Matters* (81-004-XIE, free, http://www.statcan.ca/bsolc/english/bsolc?catno=81-004-X), and in the *Analytical Studies Branch research paper series* (11F0019MIE, free, http://www.statcan.ca/bsolc/english/bsolc?catno=11F0019M).

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